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Final Environmental Impact Statement, Wastewater Treatment Facilities Tulsa, Oklahoma

(U.S.) Environmental Protection Agency
Dallas, TX

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United States
Environmental Protection
Agency

Region 6
1201 Elm Street
Dallas, TX 75270

EPA 906/9-83-009
July 1983

Water

EPA

Environmental Impact Statement

Final

Wastewater Treatment Facilities
Tulsa, Oklahoma

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Since the Draft EIS was published in August 1982, the Tulsa Water and Sewer Department (TWSD) has proposed a modified plan which requests approval of a limited portion of the project now, while continuing to study and review the remaining portions before requesting additional EPA grant monies. The items in the modified plan which are reviewed in detail in this document and which are currently proposed by the TWSD for Federal funding are: 1) additional multifunctional laboratory facilities at the Northside plant, 2) the remaining secondary treatment expansion at the Northside plant, and 3) five acres of sludge drying beds at the Southside plant. Construction of these portions of the project will not foreclose any options on other features which will be scheduled for review at a more appropriate point in the planning process.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
INTERFIRST TWO BUILDING. 1201 ELM STREET
DALLAS, TEXAS 75270

July 5, 1983

TO ALL INTERESTED AGENCIES, PUBLIC GROUPS AND OFFICIALS:

Enclosed for your review and comment is the Final EIS on EPA's proposed action of awarding a grant under Section 201 of the Clean Water Act for wastewater treatment facilities in Tulsa, Oklahoma.

This final EIS is being distributed to those who were sent copies of the Draft EIS and to those who request a copy. The document is also available for public review at the following locations:

Tulsa City County Library
400 Civic Center, Plaza
Tulsa, Oklahoma

U.S. Environmental Protection Agency
InterFirst Two Building
28th Floor, Library
1201 Elm Street
Dallas, Texas

Comments on this Final EIS should be sent to Mr. Clinton B. Spotts, Regional EIS Coordinator, EPA Region 6 (ES-F), 1201 Elm Street, Dallas, Texas 75270. It is requested that comments be submitted by the date stamped on the cover sheet following this letter.

Sincerely yours,

Frances E. Phillips
for Dick Whittington, P.E.
Regional Administrator

FINAL ENVIRONMENTAL IMPACT STATEMENT

WASTEWATER TREATMENT FACILITIES
TULSA (NORTHSIDE), OKLAHOMA

RESPONSIBLE AGENCY: U.S. Environmental Protection Agency, Region 6

ACTION BEING CONSIDERED: Awarding EPA grant funds for wastewater treatment facilities to the City of Tulsa, Oklahoma

CONTACT FOR FURTHER INFORMATION:
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ABSTRACT:

Since the Draft EIS was published in August 1982, the Tulsa Water and Sewer Department (TWSD) has proposed a modified plan which requests approval of a limited portion of the project now, while continuing to study and review the remaining portions before requesting additional EPA grant monies. The items in the modified plan which are reviewed in detail in this document and which are currently proposed by the TWSD for Federal funding by the TWSD are: 1) additional multifunctional laboratory facilities at the Northside plant, 2) the remaining secondary treatment expansion at the Northside plant, and 3) five acres of sludge drying beds at the Southside plant. Construction of these portions of the project will not foreclose any options on other features which will be scheduled for review at a more appropriate point in the planning process.

DATE COMMENTS DUE:

RESPONSIBLE OFFICIAL: Frances E. Phillips
Dick Whittington, P.E.
Regional Administrator

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PART I. SUMMARY OF DRAFT AND FINAL EIS

A. EXISTING PROBLEMS

Two previous studies addressed wastewater facilities needs in the Tulsa metropolitan area. The first of these was the 1975 Facilities Plan prepared by Black and Veatch. The study recommended that the Northside plant be expanded into a regional facility to treat wastewater from the Coal Creek, Flat Rock and Owasso treatment plant service area and that the Coal Creek, Flat Rock and Owasso plants subsequently be abandoned. The second study was the Areawide Water Quality Management Plan (208 Plan)* published by Indian Nation Council of Governments (INCOG) in 1978. This plan also supported the regionalization concept as proposed in the 1975 facilities plan, but recommended that the Owasso treatment plant be maintained separately. In addition, the 208 plan recommended more stringent effluent limitations for the Northside plant than those that existed during preparation of the 1975 facilities plan.

Prior to the 208 plan, Tulsa gave away virtually all of its sludge for use as fertilizer and/or soil conditioner. However, the 208 plan recommended that this practice be discontinued and that a sludge monitoring program be undertaken to determine the quality and provide a basis for establishing an environmentally sound sludge management program. Following the 208 recommendations, the Tulsa City and County Health Department requested that the sludge giveaway practices be discontinued. The sludge has since been stockpiled or disposed of on the plant sites while sludge quality data has been collected. Since the Oklahoma State Department of Health (OSDH) has not issued a permit for this stockpiling of sludge, and limited space greatly impairs the effectiveness of this approach, there is a serious need for adequate city-wide management of the residual solids produced at Tulsa's wastewater treatment plants.

It has been eight years since these two studies documented problems and recommended the conceptual approach for regionalization at the Northside plant. In the last two years, the Northside 201** Draft Facilities Plan, prepared by CH_2M Hill, the project consultant, was one of five documents completed as a part of the latest planning effort. Many of the original needs still exist and now others, potentially more serious, may occur in face of the continued population growth which places additional demands on the already overloaded system(s).

B. PROJECT ALTERNATIVES CONSIDERED BY APPLICANT

1. No Action

When considering the various components and remaining unresolved problems of Tulsa's wastewater treatment system, no action is not a reasonable

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*Reference Section 208, Clean Water Act

**Reference Section 201, Clean Water Act alternative. No action entails an incompleted expansion and regionalization of the Northside plant, as well as a continued inadequate city-wide sludge management plan. The environmental effects from the no action alternative would include deterioration of the water quality of Bird and Mingo Creeks, and the Verdigris River. Adverse impacts would also result from continued stockpiling of sludge at the Northside, Southside and Haikey Creek plants. The City of Tulsa would also be faced with a potential moratorium on future growth and connections in the service area beyond 1985 because the treatment capacity of the Northside facilities would be exceeded.

2. Collection System

The sewer system improvement plan for the expanded Northside sewer service area recommends the rehabilitation of a portion of the existing collection system and the construction of new interceptors, force mains and lift stations in those parts of the expanded Northside Service Area necessary to meet projected wastewater flows. Survey and rehabilitation of a portion of the existing sewer system will reduce the incidence of stormwater runoff and groundwater entering the collection system. The new facilities will alleviate current inadequacies and provide for future wastewater flows.

The current condition of the collection system for the Northside Service Area ranges from poor to good, depending mainly on the ages of individual service lines, collectors and interceptor sewers. Several large sewage lift stations collect most of the gravity flow and pump through force mains to the treatment plant.

The existence of excessive infiltration and inflow in parts of the Tulsa sewer systems is confirmed by the Northside Infiltration and Inflow Analysis report (I/I), dated July, 1982. A Sewer System Evaluation Survey (SSES) is a required second step where excessive I/I is demonstrated. Based upon the findings of the SSES, specific sewer system rehabilitation measures will be planned and performed.

The sewer survey and rehabilitation, and sewer system improvement alternatives available to Tulsa will be evaluated in the SSES phase, to determine the location, flow rates and cost of correcting each segment of the system. The SSES was authorized in April, 1983 with plans to be completed by January, 1984. A survey and rehabilitation program for the Northside wastewater collection system is the recommended alternative for initial Federal funding action. A Supplemental Environmental Impact Statement (EIS) may be necessary to assess the consequences of the preferred alternative for sewer system improvement.

3. Wastewater Treatment

The wastewater management plan for the Northside wastewater treatment plant (WWTP) consists of modification and expansion of the existing plant to advanced wastewater treatment level, and the continued discharge of treated effluent to Bird and Mingo Creeks. The major components of the advanced treatment process are ultimately planned to be biological filtration, activated sludge and granular media filtration. The phased implementation of the plan calls for initial (Phase One) expansion to 42.6 mgd capacity and the maintenance of secondary treatment levels of effluent until advanced treatment levels of effluent can be achieved.

That portion of the Phase One expanded treatment capacity at Northside attributable to the Lords Cemetary drainage area (4.5 mgd of the planned 42.6 mgd total capacity) is being included at the discretion of the Tulsa Water and Sewer Department (TWSD) and is proposed to be financed by the City of Tulsa. Additionally, the City's decision to include partial Advanced Wastewater Treatment (AWT) capacity in Phase One Northside WWTP expansion, in the form of eight of the the ten proposed Granular Media Filters (GMF), is not part of the current funding decisions to which this Final EIS applies.

The Phase One expansion of the Northside WWTP, including the partial AWT treatment would permit TWSD to meet NPDES requirements of 5 mg/l BOD, 5 mg/L TSS and 3 mg/L NH_3 by the July 1, 1988 compliance date. Those standards may be maintained until about 1992, when projected increasing influent flows will require the remaining AWT units be brought on-line in order to maintain those effluent quality levels.

Both the full expanded treatment capacity of 42.6 mgd and the partial advanced treatment capacity should contribute to the Northside plant's ability to produce an effluent quality above the permit limits. These facilities play an important role in the evaluation of the environmental consequences of the Northside WWTP expansion as presented in Part III.B.

4. Sludge Management

The Areawide Residual Solids Management Plan (July, 1982) provides an assessment and selection of preferred alternatives for the entire Tulsa wastewater treatment system (Northside, Southside and Haikey Creek WWTP's).

The emphasis for all alternatives is on beneficial use (reuse and marketing) of sludge as a fertilizer and/or soil conditioner. The solids plan also provides for the development of backup sites for reclamation and disposal of sludge not reused or marketed. Landfilling of sludge by codisposal with the City's solid waste or in reclamation of abandoned strip mine areas are the options available to Tulsa for backup sludge disposal. Seven Residual Solids Management Alternatives (RA's) are evaluated in the Solids Plan in combination with the four final wastewater management alternatives developed in the Facilities Plan. Five of the seven RA's would involve digested sludge from each of the three treatment plants being dewatered in sludge drying beds prior to reuse/disposal. The other two provide for transporting liquid sludge to selected dedicated landfilling sites for injection. The preferred residual solids management alternative is subject to further evaluation and selection decisions. The selected interim sludge management alternative involves the use of sludge drying beds at the Southside WWTP, beneficial reuse by marketing of dewatered sludge, agricultural land applications and co-disposal at Tulsa solid waste disposal sites. Final selection of the preferred solids management alternatives either on a system-wide basis or for the individual treatment plants will be deferred pending the results of further sludge management/marketing studies.

5. Industrial Waste Pretreatment

The purpose of the pretreatment program is to control non-domestic wastes containing pollutants which have direct adverse effects on human health or the environment, which interfere with wastewater treatment plant process performance, or which pass untreated through a treatment plant. Where residual solids from the treatment process are marketed or reused, the industrial waste pretreatment program has the added responsibility of assisting in the maintenance of an acceptable quality of residual solids.

Tulsa's industrial waste pretreatment program includes procedures for identifying new and existing industrial users of the sanitary sewer system, regulating industrial discharges, and reinforcing both local ordinances and Federal pretreatment regulations. The pretreatment program is prerequisite to the successful implementation of the City's wastewater treatment and residual solids management plans and programs. The City's proposed (preferred) industrial waste program, as presented in the report, Industrial Waste Pretreatment Program of July 1982, has been approved by the OSDH and EPA and is now underway.

C. COMMENTS ON DRAFT EIS

During the official review period of August 20, 1982 to October 4, 1982 (extended to October 15, 1982) written comments on the Draft EIS were received from Federal and State agencies, local organizations and interested individuals. Statements were also received at the public hearing and additional concerns were forwarded to EPA before and after the public record was closed. Many of the comments received indicated the assessment of sludge management plans was incomplete regarding specific environmental impacts. Major unanswered concerns included the potential success of proposed sludge reuse and marketing and the effectiveness of industrial pretreatment. Also, TWSD's proposal of sludge disposal as a part of strip mine reclamation in Rogers County was met by strong organized opposition.

In addition to the comments received on the Draft EIS, both EPA and OSDH provided their comments on the proposed project to TWSD on November 17, 1982. As a result, a meeting was held in Dallas, Texas on December 16, 1982 between EPA, OSDH and TWSD in an effort to resolve outstanding issues. After this meeting, EPA prepared a follow-up letter, dated December 30, 1982, which outlined to TWSD the conditions under which approval and grant funds could be awarded. TWSD's responses, provided to EPA and OSDH on March 10, 1983, presented a modified proposal. Additional information requested by OSDH regarding the Solids Plan was submitted on April 26, 1983. In response to the specific comments received on the proposed sludge management plan, it became evident that EPA and OSDH could not reach a final decision on this portion of the project until more analyses were provided. It also became clear that more time was needed to demonstrate the effectiveness of the industrial pretreatment program, as well as more time for the Advanced Wastewater Treatment (AWT) Study, which is still awaiting an EPA Headquarters review. All parties realized that the initial planning, including the environmental review, for the total project as originally proposed would not be completed in time for fiscal year (FY)

1983 EPA construction grant monies. However, EPA, OSDH and TWSD also understood that to meet existing EPA Administrative Orders*, and to comply with Congressional mandates,** some portions of the project should be allowed to proceed while others should be studied further and considered for approval at a later time. Therefore, the TWSD has proposed a modified plan which requests approval of a limited portion of the project now, while continuing to study and review the remaining portions before requesting additional EPA grant funding.

The primary difference in this modified plan from the original proposal is that TWSD is now requesting approval only on these portions of the project that are currently suited for environmental review. The review of these items would not foreclose any options on other features which will be scheduled for review at a more appropriate point in the planning process. This approach would also facilitate compliance with existing schedule requirements (Congressional mandates and Administrative Orders) although the total treatment plan to be proposed by the TWSD is yet to be finalized.

Specifically, the items in the modified plan which are reviewed in detail in this document and which are currently proposed by the TWSD for Federal funding are:

1) Laboratory addition at Northside plant;

2) Five acres of sludge drying beds at Southside plant; and

3) Remaining secondary treatment expansion at Northside Plant.

D. PREFERRED ALTERNATIVES

1. TWSD

Upon completion of the Northside Sewer System Evaluation Survey (SSES) and rehabilitation work, an assessment of grant eligibility will be made by OSDH. This assessment will include the effectiveness of the SSES and rehabilitation program, the additional 4.5 mgd flow allowance for growth in the Lords Cemetary drainage basin, and the 20 vs. 40 - year capacity for sewer system improvements. In addition, the eligibility assessment should be able to use revised population figures based on the 1980 census and updated Bureau of Economic Analysis (BEA) projections.

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*EPA's Administrative Order (AO) is in effect, pursuant to Section 309(5)(A) of the Clean Water Act, as amended, at each of the three wastewater treatment plants. These orders set interim effluent limits to be met until the Northside plant is capable of meeting its permit limits. Copies of the current AOs are included in Appendix A.

**Section 301 of the Clean Water Act, as amended, requires that publicly owned treatment works attain compliance with the standards of the Act by July 1, 1988.

In the meantime, Tulsa must proceed with implementation of the overall project described in the 201 Facilities plan if the July 1, 1988 compliance deadline is to be met. This requires design and possibly construction of some of the proposed facilities prior to the aforementioned grant eligibility determination by OSDH. To accomplish this, a special assessment of the grant eligibility is required on the following facilities: the Northside Multifunctional Laboratory Building, Sludge Drying Bed Facilities at the Southside Plant, and secondary treatment expansion of the Northside WWTP to 38.1 mgd.

In an effort to clarify the content and implementation philosophy of the Residual Solids Management Plan, several meetings have taken place between the TWSD, EPA and OSDH since the Draft EIS was prepared. As a result of input received at these meetings, the solids cost-effectiveness analysis has been updated to include several additional options. Several months have been required to solicit and evaluate sludge reuse/disposal proposals from the private sector. The revision of the Solids Plan cost-effectiveness analysis incorporates the input received from the private sector proposals and includes codisposal in the alternative analysis (see Tables 1 and 2). Even with the revised cost-effective analysis, the EPA and OSDH will not approve the plan as is because significant factors are not yet known. TWSD intends to pursue the various options outlined in the Solids Plan and to select specific sites and alternatives it wishes to pursue on a long-term basis. TWSD estimates the necessary information can be developed in the interim period of three to four years. During this period, the interim sludge plan will provide the TWSD, EPA and OSDH with the experience and information necessary to make a final selection.

The overall approach to the Areawide Residual Solids Management Plan has not changed, i.e the plan still proposes the reuse/marketing of sludge from all three wastewater treatment plants. The backup alternative was to use the sludge in the reclamation activities at various abandoned strip mines. During the interim sludge program, the plan for sludge disposal will be codisposal at a permitted solid waste disposal site.

During the interim sludge management program, the TWSD will be pursuing a number of sludge management options. At the Northside plant, strip mine reclamation and codisposal will be evaluated to determine which best fits the Northside situation.

At the Southside plant, current plans are to construct approximately five acres of drying beds and to pursue a number of reuse/marketing options. A reuse/marketing option that will likely be pursued is using the sludge as a reclamation material at active and abandoned strip mines east of Tulsa. In

Table 1
MONETARY EVALUATION
FINAL RESIDUAL SOLIDS MANAGEMENT ALTERNATIVES[a]

		Cost[c]				
Alternative[b]	Year	Capital	Replacement	Salvage	O&M	Present Worth
RA-3:	1985	$26,713,000	--		$2,773,000	$57,772,000
Drying beds,	1990		123,400		2,929,000	
Landfill @ LF1	1995		2,297,000		3,074,000	
(Conventional)	2000		3,228,000		3,189,000	
	2005			18,478,000	3,308,000	
RA-6:	1985	28,345,000	--		2,578,000	58,294,000
Drying beds,	1990		123,400		2,722,000	
Strip mine,	1995		4,096,000		2,851,000	
reclamation @	2000		3,228,000		2,956,000	
R-3	2005			16,917,000	3,050,000	
RA-8:	1985	49,817,000	--		2,626,000	75,986,000
Pipe to site	1990		123,400		2,777,000	
R-3, Drying	1995		3,095,000		2,895,000	
beds, strip	2000		4,224,000		2,983,000	
mine reclam.	2005			34,104,000	3,064,000	
RA-9:	1985	37,135,000	--		2,127,000	61,505,000
Pipe to site	1990		123,400		2,302,000	
R-3, mech. de-	1995		4,034,000		2,451,000	
wat. to 20%	2000		7,388,000		2,564,000	
	2005			26,021,000	2,664,000	
RA-10:	1985	10,519,000	--		2,217,000	40,179,000
Mech. dewat.	1990		123,400		2,390,000	
to 20%, Co-	1995		1,989,000		2,565,000	
disposal at	2000		9,074,000		2,709,000	
BFI	2005			7,126,000	2,827,000	
RA-11:	1985	16,051,000	--		2,810,000	54,565,000
Mech. dewat.	1990		123,400		3,056,000	
to 20%, Turn	1995		5,069,000		3,322,000	
to 40%, Co-	2000		9,074,000		3,557,000	
disposal at	2005			8,734,000	3,743,000	
BFI						
RA-12:	1985	25,577,000	--		2,560,000	54,199,000
Drying beds,	1990		123,400		2,704,000	
Co-disposal	1995		1,762,000		2,823,000	
at BFI	2000		3,228,000		2,916,000	
	2005			16,569,000	2,005,000	

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[a] This table replaces Table VIII-1a of the Areawide Residual Solids Management Plan, and Table VIII-2a of the Executive Summary Northside 201 Facilities Plan.

[b] Costs do not reflect any potential revenues from marketing.

[c] Expressed in January, 1982, dollars. ENR CCI = 3002; EPA O&M Cost Index = 3.32. Discount Rate = 7.375 percent. Planning period = 20 years.

Source: CH_2M Hill, Tulsa Northside Facilities Plan -- Response to Agency Review Comments, April 1983, p.11.

TABLE 2
RANKING OF TOP RESIDUAL SOLIDS MANAGEMENT ALTERNATIVES PRESENT WORTH COSTS ONLY[a]

Rank	Residual Solids Management Alternative[b]	Present Worth	
		$ Million[c]	Index[d]
1	RA-10	40.18	100
2	RA-12	54.20	135
3	RA-11	54.57	136
4	RA-3	57.57	144
5	RA-6	58.29	145
6	RA-9	61.51	153
7	RA-8	75.99	189

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[a] This table replaces Table VIII-7 of the Areawide Residual Solids Management Plan, and Table IX-1 of the Executive Summary Northside 201 Facilities Plan.

[b] The management alternatives involve the following:

RA-10:	Centrifuge to 20-percent solids, windrowing of 1/4 to to 40-percent solids for marketing, trucking of sludge marketed to BFI landfill for co-disposal.
RA-12:	Drying beds to get 40-percent solids, reuse and marketing combined with "fail-safe" practice of trucking to BFI landfill for co-disposal.
RA-11:	Centrifuging to 20-percent solids, windrowing to 40-percent solids, reuse and marketing combined with "fail-safe" practice of trucking to BFI landfill for co-disposal.
RA-3:	Drying beds to get 40-percent solids, reuse and marketing combined with "fail-safe" practice of trucking to site LF-1 for landfilling. ("Conventional alternative" with respect to innovative and alternative comparisons.)
RA-6:	Drying beds to get 40-percent solids, reuse and marketing combined with "fail-safe" practice of trucking to site R-3 for strip mine reclamation.
RA-9:	Pipeline to site R-3, centrifuging to 20-percent, windrowing of 1/4 to 40-percent for marketing, strip mine reclamation using sludge not marketed.
RA-8:	Pipeline to site R-3, drying beds to get 40-percent solids, reuse and marketing, combined with "fail-safe" practice of strip mine reclamation.

[c] All costs are expressed in January, 1982 dollars; ENR CCI = 3002, and EPA O&M Cost Index = 3.32. Discount rate = 7.375 percent. Planning period = 20 years.

[d] Index of 100 assigned to alternative with lowest present worth (RA-10).

Source: CH$_2$M Hill, Tulsa Northside Facilities Plan -- Response to Agency Review Comments, April 1983, p.12.

addition, proposals for reuse and disposal of Southside sludge by private contractors have been solicited. Currently, Tulsa has a contract with a private company for land application of liquid sludge being removed from the existing Southside lagoons.

At the Haikey Creek plant, TWSD plans to pursue the option of trucking the liquid sludge to nearby soybean and sod farmers for injection. Also, consideration is being given to operating a Process to Further Reduce Pathogens (PFRP) in the form of a pilot composting system to allow marketing to the general public.

At all three plants, one of the major goals of the interim program will be to reuse/dispose of the existing solids inventories. This includes the inventories at the Flat Rock and Coal Creek plants. Another major goal will be to involve the private sector in the reuse/disposal efforts. A request for letters of interest has been sent to several private firms and about 16 responses have been received and evaluated. In awarding any contracts, TWSD will require private contractors to follow all applicable Federal and State regulations, and to obtain permits from OSDH for any reuse/disposal method they propose.

2. EPA AND OSDH

EPA's and OSDH's preferred alternative is to complete the environmental review on the proposed Multifunctional Laboratory Building at the Northside WWTP and the five acres of sludge drying beds at the Southside WWTP and consider them for grant funding.

It is also preferred that the remaining secondary treatment expansion (i.e. to 38.1 mgd) at the Northside WWTP be included on the State Priority List for grant funding.

EPA will make a determination regarding the need for a Supplement to the Final EIS when TWSD applies for EPA grant monies for the remaining portions of the project (i.e. Northside collection system, sludge management plan, and advanced wastewater treatment).

PART II. COORDINATION AND CONSULTATION

The Tulsa Northside Draft EIS was prepared simultaneously with the development of the facilities plan and was therefore known as a piggyback EIS. As such, coordination with other Federal agencies as well as State and local agencies, and consultation with private citizens and organizations was governed by two different Federal regulations: 40 CFR Part 6, "Implementation of Procedures on the National Environmental Policy Act", November 1979, and 40 CFR Part 25, "Public Participation in Programs under the Resource Conservation and Recovery Act, the Safe Drinking Water Act, and the Clean Water Act", February 16, 1979.

A. COORDINATION

The Notice of Availability of the Draft Environmental Impact Statement appeared in the Federal Register on August 20, 1[illegible]82. The Notice announced a 45-day public review period ending October 4, 1982. However, the comment period was subsequently extended until October 15, 1982. The public review period was scheduled to provide concerned agencies and the public an opportunity to review the Draft EIS and to make comments on the adequacy of the analysis of impacts from the proposed action(s) and the alternatives.

Over 200 copies of the Draft EIS were distributed to reviewing agencies, organizations and to interested members of the public. Copies of the Draft EIS were also made available for public review at two locations in the Tulsa area.

During the review period, eight comment letters were received. Each of these letters is presented on the following pages, with EPA's responses immediately across from the comments. (See pages II-2 through II-17)

B. PUBLIC PARTICIPATION

The governing regulations are intended to encourage, provide for and assist public participation in the Federal actions such as the Tulsa Northside project. Moreover, piggyback EIS's such as this are required to implement a full scale public participation program as defined in 40 CFR Part 35, dated February 16, 1979.

TWSD prepared and followed a detailed workplan to fulfill those requirements.

1. Public Information

Providing information to the public is a prerequiste to meaningful, active public involvement [40 CFR PART 25.4(b)(1)].

Public information activities included the development of a mailing list, mailing materials, preparing a fact sheet, obtaining media coverage, conducting workshops, publishing briefing papers, presenting slide shows,

(cont'd on page II-18)

REGION VI

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FORT WORTH SERVICE OFFICE
221 WEST LANCASTER AVENUE
P.O. BOX 2905
FORT WORTH, TEXAS 76113

RECEIVED
SEP 21 1982
6 ES

IN REPLY REFER TO:

September 20, 1982

Mr. Clinton Spotts
Regional EIS Coordinator
U.S. Environmental Protection Agency
Region 6
1201 Elm Street
Dallas, TX 75270

Dear Mr. Spotts:

This is to inform you that the Draft Environmental Impact Statement for Wastewater Treatment Facilities for the City of Tulsa (Northside) has been reviewed in the U.S. Department of Housing and Urban Development's Oklahoma City Area Office and that it has been determined that the Department will not have comments on the subject Statemnt.

Sincerely,

Victor J. Hancock

Victor J. Hancock
Environmental Clearance Officer

No response necessary.

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Project Review
Post Office Box 2088
ALBUQUERQUE, NEW MEXICO 87103

RECEIVED
OCT 13 1982
6ES

ER-82/1452

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency
First International Building
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Spotts:

This is in response to your request for our review of the draft environmental statement for Wastewater Treatment Facilities, Tulsa (Northside), Tulsa, County, Oklahoma. The following comments are provided for your consideration.

For numerous years the aquatic biology of Bird Creek has been adversely affected by discharges from municipal wastewater treatment facilities and we certainly agree that steps are required to improve the water quality of Bird Creek.

Concerning the analysis in the impact statement we find that it is inadequate in describing the environmental impacts of the proposal and alternatives. The statement covers all of the proposed actions and describes the features of each alternative from a financial and construction standpoint. However, it does not analyze and describe the environmental impacts of the alternatives adequately for a decision maker to make an informed decision. For example, Tables 5-18 thru 5-22 are described as presenting a summary evaluation of environmental impacts of the various alternatives. However, the tables only present a generalization of whether an alternative is expected to cause a positive or negative impact. They do not clearly delineate the quantity and quality of impacts that will occur with each alternative. The preferred alternative is described as creating an "improved effluent quality" for biological resources. The same generalized impact is described for the other alternatives. There is no clear comparision which can answer definitive questions about each alternative such as miles of streams effected and the degree of impact, acres and types of land impacted, kind, type and amount of recreation impacted etc. The statement raises more questions than it answers.

Without this type of definitive analysis the document will be at best minimally helpful in the decision process. It does not clearly show if the preferred alternative is or is not the most environmentally acceptable project.

Concerning the alternative plans we do note that the preferred alternative for residual solids management includes the recommendation for reuse of residual

Responses:

Section III.B. of the Final EIS presents an assessment for the portions of the project on which a Federal action has been proposed at this time. The review of and decision on these items would not forclose any options on other features which will be scheduled for review at a more appropriate point in the planning process.

solids for agricultural, and/or active-strip-mine reclamation purposes. Because fertilizer is a large expense in strip-mine reclamation, it should be recognized that this alternative could benefit the coal industry by providing a source of low cost fertilizer. However, for reclamation or agriculture use, the amount of heavy metals present in the residual solids would need to be carefully controlled and monitored.

We hope these comments will be helpful in preparing a useful final environmental impact statement.

Sincerely,

Raymond P. Churan

Raymond P. Churan
Regional Environmental Officer

Response cond't:

TWSD's interim sludge management program should provide additional information and experience, including alternative evaluations and site-specific assessments of environmental effects. EPA will review the results of this program and make a determination regarding the need for a Supplement to the Final EIS when TWSD applies for additional grant monies for the remaining portion of the project.

DEPARTMENT OF THE ARMY
SOUTHWESTERN DIVISION, CORPS OF ENGINEERS
1114 COMMERCE STREET
DALLAS, TEXAS 75242

REPLY TO
ATTENTION OF

RECEIVED
SEP 20 1982
6ES

SWDPL-R 17 SEP 82

SUBJECT: Wastewater Treatment Facilities Tulsa (Northside), Oklahoma DEIS

Dick Whittington, Regional Administrator
Region VI
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Whittington:

The Draft Environmental Impact Statement on the City of Norman, Oklahoma wastewater treatment facilities has been reviewed by my staff. Comments on the DEIS are inclosed.

Thank you for the opportunity to review this DEIS.

FOR THE COMMANDER:

1 Incl
As stated

for BARRY G. ROUGHT, P.E.
Chief, Planning Division

SUBJECT: Wastewater Treatment Facilities Tulsa (Northside) Oklahoma DEIS

COMMENTS	Responses:
Sludge Handling 1. Sludge processing and handling is not addressed in sufficient detail. On page 3-12 a brief discussion of a few features of sludge handling (DAF thickener and addition of 2 new anaerobic digesters) after the expansion of the Northside WWT plant is completed is presented. Table 4-5, page 4-32, displays the sludge processing alternatives and a reference is made to Tech. Memo IV-2. It is not clear whether the only changes in sludge processing at the Northside plant will be in thickening, digestion and disposal as mentioned on pages 4-32 and 4-33. A more detailed discussion of the preferred sludge processing alternative should be presented. Also, a flow chart similar to Figure 4-3 should be included to display the phasing-in of sludge processing, handling and disposal/reuse.	The interim sludge management plan for the Northside wastewater treatment plant will consist of 1) thickening primary sludge and secondary activated sludge, 2) digestion of combined thickened sludges in existing anaerobic digesters, and 3) storage of digested sludge in existing lagoons until liquid sludge is removed by private contractors for reuse and/or codisposal in permitted land-fill sites.
Strip Mine Reclamation Sites 2. The proposed strip mine reclamation site is located approximately 25 miles northeast of Tulsa's center in another county. (Page 5-117) There should be some discussion on juriditional restrictions, if any, of disposing of sludge in a location outside of the area in which the sludge was generated.	TWSD's interim sludge management program should provide additional information and experience including, if necessary, potential impacts of disposing of sludge outside Tulsa county and impacts on affected water supply sources.
3. The exiting drainage pattern of reclamation Site R-3 is into three potable water supply sources - Oologah Lake, Lake Claremore and Verdigris River (Page 5-118). There is only a one sentence explanation on controlling runoff. (Alternative Evaluation, Surface Water). A more detailed explanation of techniques to be employed to protect surface water from runoff from Site R-3 is needed. The discussion should include an evaluation of the effect heavy rainfall would have on runoff into the three potable water supply sources.	

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333
(404) 262-6649

September 22, 1982

RECEIVED
SEP 24 1982
6 ES

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency
Region VI
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Spotts:

We have reviewed the Draft Environmental Impact Statement (EIS) for Wastewater Treatment Facilities, Tulsa (Northside), Oklahoma. We are responding on behalf of the U.S. Public Health Service.

We have reviewed this document for possible health effects and find that with one exception the EIS adequately addresses our concerns. It was noted that the EIS did not consider reducing per capita water use in conjunction with any of the alternatives discussed. The City should encourage water saving devices in all new construction and in the replacement of existing fixtures through review and revision of local codes. The Final EIS should address this issue.

Thank you for the opportunity to review this EIS. Please send us a copy of the final statement when it becomes available. If you should have any questions about our comments, please contact Mr. Lee Tate of my staff at FTS 236-6649.

Sincerely yours,

Kenneth W. Holt

for Frank S. Liselia, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Center for Environmental Health

Response - Tulsa initiated its water conservation program in January, 1981 with the appointment of a Water Conservation and Rationing Committee. It is estimated that an aggressive water conservation program could potentially achieve a 10% reduction in per capita water consumption and dry-weather flows. For planning purposes however, it was assumed that the City water conservation program will permit the maintenance of existing per capita dry-weather wastewater flows to the 2005 design year.

OKLAHOMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS
FEDERAL ASSISTANCE MANAGEMENT DIVISION
State Grant-In-Aid Clearinghouse
4545 N. LINCOLN, SUITE 285 OKLAHOMA CITY, OKLAHOMA 73105 (405) 528-8200

September 15, 1982

Clinton B. Spotts
Regional EIS Coordinator
U.S. EPA, Region 6
1201 Elm Street
Dallas, Texas 75270

RE: Draft of Environmental Assessment/Impact Statement -
24H201 - Wastewater Treatment Facilities Tulsa (Northside)
Oklahoma, (SAI #820915-001)

Dear Mr. Spotts:

The environmental information for the above referenced project has been reviewed in accordance with OMB Circular A-95 and Section 102 (2)(C) of the National Environmental Policy Act by the state agencies charged with enforcing environmental standards in the State of Oklahoma.

The state agencies, comprising the Pollution Control Coordinating Board, have reviewed the proposed project and agree that no adverse environmental impact is anticipated. Therefore, the state clearinghouse requires no further review.

Sincerely,

Don Strain

Don N. Strain
Director

DNS:mt

No response necessary.

CITY OF CLAREMORE

OFFICE OF THE MAYOR
ELIZABETH K. GORDON

P.O. Box 249
CLAREMORE, OKLAHOMA
PHONE 341-2365

RECEIVED
SEP 27 1982
6 ES

September 23, 1982

Mr. Clinton B. Spotts
Regional EIS Coordinator
U.S. EPA, Region 6 (ES-FP)
1201 Elm Street
Dallas, TX 75270

Re: Residual Solids
Management Plan

Dear Mr. Spotts:

Whereas Site R3, in Rogers County identified as a suitable site for sludge disposal for the City of Tulsa is not within the corporate limits of the City of Claremore, it poses an imminent threat to our water supply and poses a real impact on highways within the city limits which is already a financial burden.

The City of Claremore serves 4 rural water districts including one district in the immediate area of R3.

On page 3 of the briefing paper 201 Facilities Plan and E.I.S., paragraph 3 states "Should it not be possible to initiate a reclamation project in Rogers County, a detailed site-specific search for an environmentally suitable site in Tulsa County should be made." It is my opinion that site search should have already been made and since it has not, it should be done immediately. Reading further, "Another alternative to landfilling would be codisposal, which is landfilling of sludge combined with solid wastes. Under this alternative, treated sludge would be handled by a private company handling solid waste and disposed of at an existing solid waste disposal site. This is a viable, easily implemented option that could readily be modified to coincineration should Tulsa's "trash-to-energy" concept materialize." If it is a viable, easily implemented option, it should be pursued immediately.

The City of Claremore is also in the process of a new facility plan for wastewater collection and treatment E.P.A. Project No. C 40-0596-01. On page 13 of our

Responses:

TWSD's interim sludge management program should provide additional information and experience, including alternative evaluations and site-specific assessments of environmental effects.

September 23, 1982
Page 2

E.I.S. we will use codisposal in a Type II sanitary landfill. This method will be used in an approved solid waste management application. We take care of our own problems, let Tulsa do likewise.

We are led to believe that site R3 would be used as a "fail safe back up", however paragraph 4 on page 13 indicates that at present only the sludge from Haikey Creek is marketable at present and sludge from Northside and Southside plants would be removed by a private company. I must ask "removed to where?" I suspect site R3, so that rather than a fail safe back up, R3 would be a primary disposal site for Northside and Southside plants sludge.

In summary, the City of Claremore cannot allow the City of Tulsa to use site R3 in Rogers County for sludge disposal and will use any and all means to abort this plan.

Sincerely,

Elizabeth K Gordon

Elizabeth K. Gordon
MAYOR

EKG:ba

Response cond't:

Currently, the City of Tulsa has a contract with a private company (Bio Gro Systems, Inc.) to land apply liquid sludge that is being removed from the existing lagoons. The City requires private contractors to follow all applicable Federal and State regulations and to obtain permits from OSDH for any reuse/disposal method they propose. At Northside, several alternatives will be pursued involving sludge at less than 40% solids. Allowing private companies to demonstrate their equipment is a very real possibility.

AVERD L. DYE
Commissioner District 1

GLENN SWEET
Commissioner District 2

ELMER L. McGUIRE
Commissioner District 3

Board of County Commissioners

Rogers County
CLAREMORE, OKLAHOMA

October 4, 1982

RECEIVED
OCT 8 1982
6 ES

Mr. Clinton B. Spotts
Regional EIS Coordinator
U. S. EPA, Region 6 (ES-FP)
1201 Elm Street
Dallas, Texas 75270

Re: Residual Solids Management Plan

Dear Mr. Spotts:

The Board of County Commissioners of Rogers County, Oklahoma, became aware of the City of Tulsa's intention to use Site R-3 in Rogers County to dispose of sludge generated from three sewage treatment plants in Tulsa. They met with Patty Eaton, Tulsa's Water Commissioner and her staff urging them not to consider Rogers County for their disposal site.

Tulsa's proposal to use Site R-3 includes many opportunities for environmental accidents resulting in damage or injury to a large portion of Rogers County population.

The plan to transport forty (40) tons of this material over our presently crowed highway and inadequate county road system is simply not a good alternative when there are disposal sites one-third the distance from the source.

While land reclamation may be a desirable goal, the twenty-two (22) square mile area selected in Rogers County is an extremely sensitive area since it includes the water shed area for the sole potable water supply for the City of Claremore and five (5) rural water districts.

Lake Oologah has a tributary water shed from this same area and it is a water supply for Tulsa and several other communities.

If marketing and a so called fair safe co-disposal does not meet the City of Tulsa's approval there are coal strip pits very near their North side plant. Further land application near the source is a much more desirable use of this material and can be justified if only on the basis of a shorter hauling distance.

Coal strip pits in Rogers County are presently being reclaimed through a program whereby current coal mining pays thirty-five (35¢) cents per ton for reclamation of orphan pits. This program is underway with a lot of reclamation completed. The plan is to reclaim all orphan pits and require current mining to reclaim as they go. With this program in place and working there is no need for Tulsa's reclamation plan in Rogers County.

Comments acknowledged. No response necessary.

Letter
Page -2-

Since there are several better, more environmental sound, alternative for disposal of Tulsa's sludge, Rogers County wants to herewith be on record as rejecting Site R-3 as a disposal site on the grounds and for the reasons set out above.

Board of County Commissioners
Rogers County, Oklahoma

Commissioner

BCC/aw

5238 S. Marion Ave.
Tulsa, Oklahoma 74135
September 21, 1982

Mr. Clinton B. Spotts
Regional EIS Coordinator
EPA, REION 6
1201 Elm St.
Dallas, Texas 75270

Dear Mr. Spotts:

The comments in this letter express my concerns and questions about the effects the actions proposed in the Draft Environmental Impact Statement for Wastewater Treatment Facilities Tulsa (Northside), Oklahoma August 1982 will have on our community when they are added to the effects of previous actions of EPA.

EPA actions since the approval of the first 201 project in Tulsa County in 1973 has been leading this community toward conversion to urban uses of its endowment of Class I agricultural soils in southeast Tulsa County.

The seriousness of the consequences to the human environment if this is allowed to happen can not be over emphasized. These soils are capable of providing an everlasting benefit of food to generation after generation to the end of human history. The loss of our best farmland, if it continues at the present rate, is a more certain threat to our nation than our many external threats. The rate of farmland conversion to urban uses is increasing, going from 51 million acres in 1958 to 90 million acres in 1977. Even more ominous is the Bureau of Census preliminary 1981 data showing an annual decline in land in farms averaging almost 10 million acres between 1969 and 1979. It is not known what has happened to this land but much of it is probably in the pipeline to urban conversion. Also not known is the quality of this land but it is known that urban uses take the best land. This speeding up of agricultural land conversion coincides with increasing federal planning and grants.

The first action of of EPA in Tulsa County using PL92-500 funds was to finance final planning and construction of the RMUA Haikey Creek project to provide sewer service to south Tulsa and Broken Arrow within the Haikey Creek watershed. This project opened 23,600 acres to development with an ultimate basin population at 10 per acre of 236,000 in a county which had only 400,000 at that time.

Response - EPA recognizes the importance of prime farmlands as a local and/or national critical area resource to be preserved and protected wherever possible. Although the proposed Northside wastewater treatment plant and associated facilities and programs do not directly cause urban growth and the resultant conversion of important agricultural lands to other land uses, they do facilitate growth and thus indirectly may contribute to land use conversions.

The Federal Clean Water Act, as amended, deals with the problem of urban growth by restricting EPA funded projects to those things necessary to eliminate existing pollution problems and away from actions that would predominately serve or encourage future growth. The use of Public Law 92-500 Section 208 planning funds by local agencies such as the Indian Nations Council of Governments (INCOG) to project population growth patterns and trends is strictly a local planning process and does not convey a Federal endorsement on the growth projections and any resultant land use changes they may imply. The INCOG was developed after lengthy local public input and represents their best estimates of future growth trends.

The Haikey basin had a population of 12,500. The treatment facility was located at 151st and Garnett which is almost in the center of the broad alluvial plain of Class I agricultural soils known as the Bixby bottoms. The EPA rendered a declaration of negative assessment of impact for the project and no environmental impact statement was prepared.

The enactment of PL92-500 came after the last sewer bond election in Tulsa in 1969. Instead of going back to the people of Tulsa to raise the local portion of the cost:

> The sponsors of Haikey Creek Interceptor System in Tulsa, Oklahoma, financed their system by selling developers debentures which could later be applied only against connection fees, and were not convertible into cash. This places great pressure on developers to sell lots as quickly as possible after the system has been installed. Although the debentures appreciate at 6% per year toward the connection fees, there is every incentive to use them as soon as possible. If they are held long enough to appreciate beyond the value of the connection fee, the balance cannot be realized cash. Also, with contemporary interest rates on commercial paper as much as double the 6% offered by the debentures, they are a relatively poor investment for the developers. [1]

After stimulating growth in the Haikey basin by these actions EPA funded under section 208 of PL92-500 a study prepared by the Indian Nations Council of Governments titled Population and Land Use Update: Illustrative Trendline Population Projections, using 1970 population and a 1978 estimate. Broken Arrow's share of Tulsa County population increased from .029469 in 1970 to an estimated .072368 in 1978 to a projected .1099046 in 1985. Tulsa's Haikey Creek basin population has had a similar increase.

When this 208 trendline population study became available in June 1979 planning agencies serving Tulsa City and County began developing comprehensive plans using the projections.

The Tulsa Metropolitan Area Planning Commission's Open Space Plan: Phase II September 1981 was the first adopted. It provided objectives and policies to open the bottom lands of the Arkansas River to urbanization. Using needed drainage way improvements to provide corridors through the farms to the river and using existing River Parks and the other parks located along the river as a base to build additional parks and a trail that extends on both sides of the Arkansas River from Keystone Dam to the Wagoner County Line.

3

The plans for Haikey Creek on page 102 of TMAPC's Open Space Plan: Phase II:

> HAIKEY CREEK. Over the next twenty years the area drained by Haikey Creek will continue to experience substantial population growth. The existing area park will need to be expanded. The area has several special features which provide an opportunity for an open space system unique in the Tulsa Metropolitan Area. As discussed earlier, the area has an abundance of poorly drained agricultural land. Haikey Creek itself is prone to flooding. Government agencies already own two large pieces of land; the County Park along Garnett Road south of 111th Street and the RMUA sewer plant at 141 and Garnett (sic). Urbanization is rapidly moving into the area, suggesting that the efforts should proceed toward the creation of a large open-space system for the benefit of the whole county. The county park should be expanded and connected to the Arkansas River by a trail loop along creeks and street rights-of-way. The trails would lead the pedestrian into, or through prime agricultural lands (preserved by drainage regulations or the public acquisition of urbanization rights) to the RMUA property. This property, located on a sharp, sandy curve in the river, is not especially suited to active recreation but it could be left in its present undeveloped state as a nature preserve. The River Parks will eventually be extended through this area and this whole complex of parks and preserved land could serve as focal point for the southern part of the metropolitan park system. The rapid rate of growth in Sector 13 and the poor drainage conditions mean that there will be a need to preserve a considerable amount of open space. Because some of these lands are important as farms and orchard lands, they should be maintained as private open space.

This plan is a part of the Tulsa County comprehensive plan despite the fact that the Tulsa District, Corps Of Engineers found, in preparing the Tulsa Urban Study, that:

> The Urban Study plans identified more potential park lands than will be needed. Only parks in areas that are urbanized would be developed. No public parks were proposed in areas presently under cultivation, such as those in the Arkansas River bottom lands. 2

The Subcommittee on the City of the Committee on Banking, Finance and Urban Affairs, U. S. House of Representatives in their report titled Compact Cities July 1980 made as their number one recommendation:

> The Department of Agriculture should take the lead among federal agencies in (a) demonstrating that farms are vital to urban areas, and (b) promoting state-local efforts to assure that endangered farmlands will not be invaded or surrounded by development except for essential purposes when all feasible locational alternatives are exhausted.

The Indian Nations Council of Governments, using TMAPC's Open Space Plan: Phase II as a guide and 208 trendline population projections, prepared a twenty year park plan with trails and parks down Haikey Creek to the Arkansas River. This park plan is now a part of the Tulsa County comprehensive plan. A water distribution plan using 208 trendline population projections is before the TMAPC for puplic hearing tomorrow.

On page6-7 of this Draft EIS an issue indentified by the PAC :

> Adverse impact on prime agricultural land with respect to:- using past growth trends in facility planning, thus perpetuating southerly and southeasterly development and its encroachment on prime agricultural land.

On page 6-10 of this EIS the Water and Sewer Department response:

> EPA has mandated the proceedure for projecting population for facility planning purposes, and Tulsa is obliged to use this method, in spite of its effect on the perpetuation of growth to south and southeast Tulsa.

It is my understanding that the population projections that EPA has mandated are the 208 trendline projections.

Will EPA continue to approve phased expansion of the RMUA Haikey Creek treatment facility to serve full development in the Haikey Creek basin without an EIS while limiting expansion in the other watersheds to 208 trendline projections?

The Haikey Creek 201 project was one of 52 projects analysed by Urban Systems Research and Engineering for the Council on Environmental Quality titled Interceptor Sewers and Suburban Sprawl: The Impact of Construction Grants on Residential Land Use. Volume I, Analysis, July 1974 and was one of eight of these projects selected for case studies in Volume II, same title September 1974. This analysis identified and predicted many of the impacts this community has been and will be burdened with as a result of the construction of the Haikey Creek 201 project. Because an EIS record is not available for the Haikey 201 project include pages 1 through 86 of Volume I, Analysis and pages 246 through 280 of Volume II, Case Studies with these comments to the agencies reviewing this Draft EIS and as a part of the final EIS record.

Thank you for giving me this opportunity to provide these comments and questions to this study.

Sincerely,

John Wheat

John Wheat
Member,
Advisory Committee
Northside 201/EIS Study

5

1. Interceptor Sewers and Suburban Sprawl:The Impact of Construction Grants On Residential Land Use, Volume I, Analysis, page 77 (Encl.)

2. Department Of The Army. Tulsa District, Corps Of Engineers, letter dated 29 October 1981. (Encl.)

Interceptor Sewers and Suburban Sprawl:, Volume II:Case Studies pages ii,·iii, 1, 2, 246 through 273, 278, 279, 280. (Encl.)

preparing and distributing meeting notices, holding public meetings, and maintaining two depositories for project documents.

A mailing list of interested agencies, organizations, individuals, and the names of the project's Public Advisory Committee (PAC) members, may be found in Appendix C. Notices of the first and third public meetings were mailed to persons and organizations on the mailing list. The notice of the second public meeting was distributed with City utility bills. A letter of invitation was sent with the notice of the third public meeting to groups who had viewed the slide show. Utility bills were also used in mailing a questionnaire requesting information on infiltration/inflow.

Monthly and sometimes semi-monthly mailings to PAC members throughout the duration of the project have contained the minutes of the previous meeting, announcements and agenda of the next meeting, as well as any other notices. Information and notices of meetings have also been mailed to agencies directly concerned with the project's planning process including: EPA; the Oklahoma State Health Department; INCOG; the Corps of Engineers, Tulsa District; and the Tulsa City/County Health Department.

Early in the process, a fact sheet describing the project was prepared for use by the media. Notices of all public meetings were also sent to a press list which included both print and broadcast media (see Appendix C). The Tulsa World and the Tulsa Tribune have provided continuing newspaper coverage. Some of the public meetings received television coverage and there have also been television interviews with the consultants and the staff.

The TWSD held an orientation workshop for PAC members in March 1980. In January 1981, the TWSD and CH2M Hill, engineering consultants for the project, held a workshop to inform industries about regulations pertaining to direct discharge of industrial wastes into the public sewer system. This workshop was attended by 180 persons. A second workshop, held on November 3, 1981, discussed the financing of Tulsa's industrial waste pretreatment program and was attended by 15 persons.

Five briefing papers were published for the purpose of aiding the public's understanding of the need for improvements at the Northside plant and for management of residual solids. These papers provided background information on the project, described the data and the criteria used in developing and evaluating the alternatives, and provided cost information on the alternatives selected for final consideration. These papers were distributed at public meetings, mailed to persons and groups on the mailing list, and delivered to the media and interested officials.

A slide show designed to encourage public participation in the decision-making process identified project needs and discussed the alternatives. A total of 760 persons viewed the slide show at 33 meetings. The project's public participation coordinator used questionnaires at each showing to collect data on public opinion regarding wastewater and sludge disposal management alternatives. The slide show presentations, therefore, were informative for both the public and the consultants.

Notices of all public meetings have appeared in both Tulsa daily newspapers. In addition to news stories about the meetings, one-page notices of each meeting containing project information were widely distributed. Public service announcements were also sent to all radio stations prior to each public meeting.

2. Consultation

"Public consultation" means an exchange of views between governmental agencies and interested or affected organizations [40 CFR Part 25.4 (d)]. Questionnaires, the Public Advisory Committee, public meetings, meetings with officials and agency representatives, and a public hearing were all used to assess public opinion about the project. Public consultation must be preceded in each instance by a timely distribution of materials to be discussed and must be sufficiently in advance of decision making to allow the Agency to assimilate public views into agency actions.

a. Questionnaires

Questionnaires were useful in obtaining industrial waste discharge data, information on the location of overloaded sewers, and public opinion regarding the proposed wastewater and sludge management alternatives, as well as to evaluate the first and second public meetings.

In the summer of 1980, a questionnaire was sent to 1,800 industries requesting information on types and amounts of industrial waste directly discharged into the public sewer system. Responses were received from over 60 percent of those contacted. This data was then used in developing Tulsa's industrial waste pretreatment program.

In March 1981, a mailing briefly outlining the Facilities Planning process was distributed with the City's utility bills to 125,000 customers. Included in the mailing was a questionnaire requesting information on backed-up sanitary and storm sewers. The TWSD received 5,000 completed questionnaires. This information was used to help identify places where groundwater or rain seeps into the sewer system, causing overloading of the system. These data were used in projecting flows and sewer sizing.

Questionnaires on wastewater and sludge disposal alternatives distributed at slide show presentations were completed by 107 members of various organizations. Initially, four categories of wastewater alternatives were listed in the evaluation questionnaire. As alternatives were screened, two of these categories were dropped and the evaluation questionnaire was revised accordingly.

Of the 39 persons attending the first public meeting, three completed questionnaires. Of the 36 persons attending the second public meeting, 16 completed questionnaires. The evaluation of these questionnaires is incorporated in the response summary for these meetings.

b. Public Advisory Committee

A Public Advisory Committee for this project was officially appointed in 1979. It consisted of 40 persons representing four categories of the public-public officials, public interest groups, private citizens, and economic interest groups. Also, all members were residents of the geographic area to be served or impacted by the proposed action (see Appendix C). The purpose of the PAC was three fold: to review, comment, and recommend to the Tulsa Water and Sewer Department staff on the plan and its development; to help keep the public informed on the plan; and to bring community concerns and opinions to the TWSD's attention. The primary responsibility, however, for decision-making in environmental programs is vested by law in the elected or appointed public officials.

Prior to the execution of the contract for the project, the PAC was involved in developing the scope of work for the Draft Environmental Impact Statement. Since October 21, 1980, when work on the EIS started, the PAC has reviewed and commented on all reports, programs, and schedules that have been produced for this project. To date (April 1982), this included 33 published Facilities Planning and EIS technical reports of varying degrees of complexity (see Bibliography). Copies of the reports were distributed at the PAC meetings and were mailed upon request. Reports were summarized by the consultants at the meeting at which the reports were distributed. Reports were assigned by the PAC chairman to subcommittees or the committee as a whole for review and recommendation, to be reported upon at the following meeting. Questions resulting from review of reports were generally resolved by staff or the consultants during the meeting. Questions that were not readily resolved were identified as issues. They are described in Part II.B.3 of this Final EIS. Comments obtained were generally noted in subsequent technical reports prepared throughout the course of the project.

c. Public Meetings

The first of four public meeting was scheduled by EPA for the purpose of developing the scope of the Draft Environmental Impact Statement. After work started on the Draft EIS, three additional public meetings were held as follows: (1) April 7, 1981 to introduce the project and discuss its financial impacts, 39 persons attended; (2) November 18, 1981 to describe the alternatives, 39 persons attended; and (3) April 2, 1981 to describe and discuss the selected alternatives, 37 persons attended. Meetings with the Utility Board and the City Commission were held on April 9, 1981, November 18, 1981, and April 7, 1982 for the purpose of informing these decision-makers of the plan's progress and development and to seek their opinions.

A separate meeting was held with the City Commission on April 3, 1982 to describe the small array of alternatives prior to the selection of the final alternatives. In addition, two work sessions were also held with PAC representatives and the decision makers.

Following the decision to consider the use of treated sludge in strip-mine reclamation projects in Rogers County in early 1982, several meetings were held between City of Tulsa representatives and officials of the City of Claremore and of Rogers County to discuss the beneficial and negative impacts of that particular alternative.

At the conclusion of a May 10, 1982 meeting of the Claremore City Council, the Mayor suggested that if the plan were to be implemented it would require a considerable amount of public education.

d. Public Hearing on Draft EIS and Facilities Plan

EPA sponsored a public hearing at 7:30 p.m. on September 21, 1982 at the City Commission Auditorium in Tulsa, Oklahoma. The meeting was attended by representatives of EPA, the TWSD project consultants and agencies, as well as 69 citizens. The meeting was divided into two parts. First, formal presentations were given by representatives of EPA, the OSHD, consultants, and the Tulsa Water and Sewer Department as follows:

Person	Topic of Statement
Paul M. Witthoeft Assistant Regional Counsel/Hearing Officer U.S. EPA, Region 6	Introductory Remarks
Paul M. Witthoeft for Jonathan York Construction Grants Project Engineer U.S. EPA, Region 6	Construction Grants Program
Paul Hodge Coordinator Construction Grants Oklahoma State Health Department	State Construction Grants Program
Joseph D. Swick, Jr. Project Officer, Environmental Impact Statement U.S. EPA, Region 6	Environmental Impact Statement and Public Participation Program
Murry Fleming Facilities Plan Consultant CH$_2$M Hill	Facilities Plan
William F. Buchholz, Jr. Environmental Impact Statement Consultant Camp Dresser & McKee, Inc.	EIS Evaluation
Patty Eaton Commissioner Tulsa Water and Sewer Department	Statement by the City of Tulsa

Second, after the formal statements, comments and questions were received from the audience. These are summarized with EPA's responses in Part III. B. 3.e. below.

3. Comments and Responses

a. Scoping Meeting

EPA's responses to comments received at the scoping meeting are contained in the "Responsiveness Summary" included in Appendix E.

b. Public Advisory Committee

Questions and comments made by the PAC focused on: (1) sampling procedures for dry-weather I/I and for sludge quality; and (2) the scope of the downstream baseline environmental assessment. Some PAC members said they believed that: (1) the original screening session should have involved the PAC together with the technicians and professionals; and (2) evaluation of the alternatives reflects too much emphasis on estimated present worth and not enough on environmental issues.

Issues identified by the PAC are summarized as follows:

- Impact of development in the Cherokee Industrial District on the plant's treatment capacity.
- Adverse impact on prime agricultural land (Mason soils):
  - using past growth trends in facility planning, thus perpetuating southerly and southeasterly development and its encroachment on prime agricultural land.
  - using it for sludge disposal sites.
- Difficulty in obtaining sludge disposal sites within Tulsa County (most of the alternative sites are located outside Tulsa County).
- Possible adverse impact of backup sludge disposal alternatives on water supplies.
- Possible environmental impacts of breakpoint chlorination.

Responses by the TWSD to issues raised by the PAC have resulted in the following:

- Impact of the Cherokee District Issue. Projected flows were increased assuming a certain level of development at Cherokee Industrial District.
- Prime agricultural land issue. Recognition of the importance of prime farmlands as a local and/or national critical area resources to be preserved and protected wherever possible.

- Out-of-county sludge disposal sites. The political problems are recognized by Tulsa City and County officials, and efforts are being made to make a more intensive search for sites in Tulsa County, to develop other disposal alternatives, and to work with officials in other counties in an effort to find mutually satisfactory solutions.

- Agricultural reuse. Because of strong public support for this alternative, sludge drying methods were changed from mechanical, which was first recommended, to the use of drying beds, which results in an easier-to-handle product.

c. Civic Organizations

Persons attending the slide show presentations offered several suggestions for future action to be undertaken by the City:

- Provide more information, particularly cost and financing information, including amortization of costs and the effect of these costs on millage rates.

- Stop industry from discharging untreated industrial wastes directly into the public sewer system.

- Consider the sale or give-away of sludge, and the use of methane gas to fuel pumps and compressors.

- Make printed brochures available explaining alternatives in laymen's language.

- Avoid expensive delay.

d. Utility Board and City Commission

The Utility Board voiced concern about the financial impact of a project of this magnitude, and agreed that implementation should be phased. The Board was also concerned that nothing be built in the early stages of the project's implementation which might have to be abandoned at a later time because of possible changes in Federal and State requirements for the Northside plant (April 21, 1982 meeting). At its meeting of April 23, 1982, the City Commission also expressed concern regarding the project's financial impact on the City and the need for phasing project implementation over a period of time.

e. Public Hearing and EPA Responses

The public hearing was held in Tulsa at 200 Civic Center on September 21, 1982. Public comments were solicited through formal oral testimony and written statements. The public was notified of the hearing by notice in the Draft EIS, notice in the Federal Register, and notices in the Tulsa Tribune on August 4, 5, & 6, 1982. Twenty-two people spoke, excluding the officials and consultants involved in EIS preparation, and each of their comments is summarized as follows with EPA's reponses to the numbered comments.

State, County and City Officials:

Honorable Straton Taylor, State Senator - 1) Considering public policy, the hearing should have been held in Rogers County since the impacts will be over there. 2) This project is not an example of communities working together to their mutual advantage. 3) The proposed plan to locate something in Rogers County that Tulsa doesn't want is politically efficient. 4) There has been no on-site inspection. 5) Do not agree that it will increase property value in any way, shape or form in Rogers County. 6) If the City proceeds with this there will be long legal action with negative results no matter what the outcome.

Responses - Comment 1) Rogers County Officials will be notified regarding future EPA action(s) on this project. Comments 2), 3), 5), & 6) are acknowledged. No response necessary. 4) TWSD's interim sludge management program should provide additional information and experience, including site-specific inspections if necessary.

Honorable Aderdl Dye, Commissioner of Rogers County - 1) Opposed to the project for the citizens of Rogers County. 2) It should be in Tulsa County, which has a place for it as much as Rogers County does.

Response - Comments acknowledged. No response necessary.

Honorable Glenn Sweet, Commissioner of Rogers County - 1) Opposed to sludge in Rogers County. 2) Keep it in Tulsa county, you have a sludge problem and we don't.

Response - Comments acknowledged. No response necessary.

Honorable Elmer McGuire, Commissioner of Rogers County District 3 - 1) This watershed in Rogers County provides water to Lake Claremore and Oologah Lake, and Tulsa may possibly pollute its own water system as well as the one used by the City of Claremore. 2) Tulsa should look at a different method of sludge disposal. 3) Would Tulsa like it if the situation were reversed?

Responses - Comment 1) Since TWSD is not requesting EPA funding on the sludge portion of the project, an additional assessment is not appropriate at this time. When TWSD applies to EPA for other federal grant monies after completion of the "interim sludge management program", EPA will assess the impacts of its action and determine if a Supplement to the Final EIS is required. 2) Concur. This is an objective of the 3-4 year interim sludge management program. 3) Comment acknowledged. No response necessary.

T. Jack Graves, District Attorney for Rogers County - 1) Representing the Board of County Commissioners in protest of the adopted plan by City of Tulsa for disposal of sludge in Rogers County. 2) There are potential long term effects of surface and groundwater contamination from excess heavy metals, nitrates and phosphorus in the sludge. 3) Not aware of Rogers County being represented in CAC or notified of public hearings. Request that Rogers County be notified of any further proceedings that may occur regarding this plan to dump sludge in Rogers County. 4) Will take any legal action necessary to restrain implementation of this plan.

Responses - Comments 1) and 4) acknowledged. No response necessary. 2) Since TWSD is not requesting EPA funding on this portion of the project, any additional assessment is not appropriate at this time. 3) Two residents served on the PAC. Also, the press list contained Rogers County media. Rogers County officials will be notified regarding future EPA actions(s) on this project.

Honorable Elizabeth Gordon, Mayor of Claremore, Oklahoma - 1) supports comments made by Rogers County Commissioners, Senator Taylor and Director of City-County Planning Commission. 2) The site poses an imminent danger to water supply of four rural water districts. 3) Detailed site studies should have been made for a suitable site in Tulsa County. 4) Has codisposal of sludge been thoroughly researched? 5) During the interim program, to where will sludge at the northside and southside plants be removed? 6) The residual solids management plan using our site will require litigation and the City of Claremore would ask to be an intervenor in that lawsuit.

Response - Comments 1) and 6) acknowledged. No response necessary. 2) TWSD is not requesting EPA funding on this portion of the project, any additional assessment is not approprate at this time. 3) and 4) TWSD's interim sludge management program should provide additional experience and information, including alternative sites and methods of disposal. 5) Currently, the City of Tulsa has a contract with a private company (Bio Gro Systems, Inc.) to land apply liquid sludge that is being removed from the existing southside lagoons. The City requires private contractor(s) to follow all applicable Federal and State regulations and to obtain permits from OSDH for any reuse/disposal method they propose. At Northside, several alternatives will be pursued involving sludge at less than 40% solids. Allowing private companies to demonstrate their equipment is a very real possibility.

M.E. Williams, Director of the City of Claremore, Rogers County Metropolitan Area Planning Commission - 1) The commission was not informed of this plan until after it had been approved by the Citi en Advisory Committee. 2) Site R-3 contains several single family residential subdivisions, the entire Sequoyah School facilities and several hundred small and large landowners. 3) Site R-3 is used for farming and ranching, and coal pits provide water for livestock and for recreational purposes. 4) Site R-3 contains important water supply watersheds for Claremore and several rural water districts. 5) The impacts along transportation routes (i.e. air and noise, odor, and insects) were not properly addressed. 6) Several billion dollars worth of new reclamation projects were approved and will be started so another reclamation program is not needed. 7) Considering the potential adverse impacts of contaminants in the sludge, it should be codisposed of along with the Tulsa solid waste.

Response - Comments 2), 3), 4), and 6) acknowledged. No response necessary. 1) Rogers County Officials will be notified regarding EPA actions on this project. 5) Since TWSD is not requesting EPA funding on this portion of the project, any additional assessment is not appropriate at this time. 7) Acknowledged. During the interim sludge program, the plan will be codisposal at a permitted solid waste disposal site.

Toney D. Foster, President of Claremore Area Chamber of Commerce 1) People in Rogers County are concerned that the mutual trust seems to be in jeopardy from an attempt by Tulsa to eliminate a problem of its own without taking into consideration what effect it would have on Rogers County. 2) What is in the sludge? 3) How long will it take to decompose? 4) What are the long-term effects on the site? 5) Can the site ever be used for any purposes other than grazing land? 6) What are transportation impacts?

Response - Comment 1) Acknowledged. No response necessary. 2), 3), 4), 5), and 6) The interim sludge program should provide additional experience and information for TWSD to make selection regarding sludge management. If TWSD applies to EPA for additional federal grant monies after completion of the interim sludge program, EPA will assess the impacts of its action(s) and determine if a Supplemental EIS is required.

Members of the Citi en Advisory Committee:

Colonel James R. Aichele - 1) The City or public should not be saddled with stringent regulations and completion date of 1988 with no or very little federal assistance. 2) Consideration should be given to modify the compliance schedule to lessen the financial and environmental impact on an already hard pressed public.

Response - Comment 1) Acknowledged. No response necessary. 2) The 1988 compliance date is contained in the Clean Water Act, Public Law 97-117 (as amended December 1981), in which Congress extended the deadlines for municipalities from 1983 to 1988. Since this date was set by Congress, EPA is powerless to extend that deadline further.

Abbey Langenheim - 1) Views the residual solids as a positive resource. 2) Use it to the best advantage for the larger metropolitan area; 3) process the remainder to the benefit and safety of the environment.

Response - Comments acknowledged. These are apparent objectives of TWSD's interim sludge management program.

Allen D. West - 1) Pollution of Bird Creek has created a severe economic burden on my ranching and farming operations. 2) A phasing plan with compliance in January 1993 is not expeditiously addressing the pollution problem. 3) The terms of the NPDES permit should be met swiftly without relying on State's water quality standards being downgraded. 4) Without support of the citizens of Rogers County, the selected residual solids management plan should be revised.

Response - Comments 1) and 3) acknowledged. No response necessary. 2) Compliance is required by 1988 and the project schedule has been revised accordingly. 4) TWSD's modified plan proposed an interim period of 3-4 years to pursue additional sludge management options before selecting a final solution.

Donna Griffin - 1) Site R-3 is 10,000 acres of which Tulsa would only use about 130 acres. 2) Sludge is a soil conditioner, improves yields, and would eventually bring acreage back to a workable contour. 3) Some local coal operators have expressed interest in the sludge as a soil conditioner or high nitrogen product. 4) Mine sites now under consideration for Federal monies in the abandoned mine land program are not in site R-3, but are several sections to the north. 5) After investigation, there are no negative impacts of this site on the environment.

Response - Comments acknowledged. No response necessary.

Suzette Birch - 1) Tulsa is not the only municipality contributing to the pollution of Bird Creek, but is the only one required to go to advanced treatment to correct part of the problem. 2) Tulsa's capital improvements needs require environmental concern and economic realism at a time when some electric bills are higher than mortgage payments. 3) Of the three problems to deal with on the CAC (i.e. pollution of Bird Creek, City-wide sludge disposal and industrial pre-treatment), the most critical problem facing the City of Tulsa today is sludge disposal. 4) The time frame recommended to the City was reasonable, rational, logical, and based on knowledge accrued over 2 years of regular committee meetings. 5) Staff personnel were very helpful and it was a shame no one from EPA was present at our meetings. 6) Just became aware of the Federal statutes that give us only until 1988, and consideration should be given to a show good faith when a City is going to be hard put financially to meet that deadline.

Response - Comments 1), 2), 3), 4), and 5) acknowledged. No response necessary. 6) Congress extended the compliance date for municipalities from 1983 to 1988 and EPA is powerless to extend this deadline.

Janet Bradley - In the interest of time and since most of what I prepared to say has already been said, I would pass at this time.

Response - Comment acknowledged. No response necessary.

John Wheat - 1) Previous EPA actions have led to urban sprawl and development on prime agricultural lands, in particular, the Class I agricultural soils along the Arkansas River. 2) Adverse impacts were identified on prime agricultural land (pgs. 6-7 of Draft EIS) with respect to past growth trends and facility planning, thus, perpetuating development and its encroachment on prime agricultural land. 3) Will EPA continue to approve phased expansion of the Haikey Creek facility, without any EIS while limiting expansion in other watersheds to trend line projections?

Response - Comments acknowledged. The EIS recognizes the importance of prime (or "important", or Class I) farmlands as a local and/or national critical area resource to be preserved and protected wherever possible. Although the proposed Northside WWTP and the associated waste management facilities and programs do not directly cause urban growth and the resultant conversion of important agricultural lands to other land uses, they do facilitate growth and thus indirectly may contribute to land use conversions.

The Federal Clean Water Act, as amended, deals with the problem of urban growth by restricting EPA funded projects to those which are necessary to eliminate existing pollution problems. It prohibits actions that would predominately serve or encourage future growth. The use of PL 92-500 Section 208 planning funds by local agencies such as the Indian Nations Council of Governments (INCOG) to project population growth patterns and trends is strictly a local planning process and does not convey a federal endorsement of the growth projections and any resultant land use changes they may imply. The INCOG plan was developed after lengthy local public input and represents its best estimates of future growth trends.

Other Citizens:

Mike Warren - 1) After hearing Commissioner Eaton's statement and being reasonably assured that it wouldn't be shoved down their throats, 80% of the 100 citizens interviewed (by KWPR Radio) were against the dumping of sludge in Rogers County. 2) After we let it be known that the plan recommended sludge be dumped in Rogers County, 100% of those interviewed said they did not want sludge dumped in Rogers County. 3) 2,600 signatures is a pretty good feeling of what Rogers County citizens have decided as far as this issue is concerned. 4) This is a small group that has shown up here tonight, and a hearing in Rogers County is definitely needed before anything else is done on this matter.

Response - Comments 1), 2) and 3) acknowledged. No response necessary. 4) Rogers County Officials will be notified regarding future EPA action(s) on this project.

Abner Bruce - The northern Rogers County area is one of our prime areas for future residential and commercial growth, and this would be a detrimental economic impact to the builders in the industry as well as other businessmen and land owners in the community.

Response - Comment acknowledged. No response necessary.

Tim Wiggs - Representing myself and the Rogers County Real Estate Brokers Association. We are against the Tulsa County sludge in Rogers County totally.

Response - Comment acknowledged. No response necessary.

L. Fincannon - 1) The problems in sanitation are the problems of Haikey Creek, Flat Rock, the northside plant go back to 1961. 2) A regular parade of individuals have discussed the problems and it has gotten worse each year. 3) To show you the inefficiency of the programs developed in the past, right in the center of Tulsa people do not have City water or City sewers. 4) A strong look should be taken at the past history and record of what has happened in the past. 5) Agencies that are sponsoring these programs have a responsibility to the taxpayers to see that the programs are feasible before they start.

Response - Comments 1), 2) and 3) acknowledged. No response necessary. 4 and 5) Concur. The feasibility of the sludge management program and advanced treatment require additional study before a decision can be made.

Tom Baines - 1) The history of Tulsa's effort to upgrade wastewater treatment in the area served by the Northside plant exemplifies that process of common involvement, concern and partnership. 2) From 1974 through this year, our efforts have been hampered by a series of reversals and changes in directions on the part of EPA. 3) This latest sudden shift in commitments by the EPA on which our plan and program are based is a drastic shortening of the time for compliance with standards and a jolting increase in the level of a local financial burden. 4) Tulsa and EPA should develop a two phased implementation plan at Northside: Phase I to start in 1983 based on a commitment of $76.5 million for urgent elements and Phase II in 1995 with $43.3 million for completion. 5) Timely implementation of the Northside plan should be affordable, to this community, i.e. will not result in inequitable shifting of the financial burden to any sector of the community nor require an unrealistic shifting of the captial expenditure priorities of the City.

Response - Comments 1) and 2). No response necessary. 3), 4) and 5) The 1981 Amendments to the Clean Water Act made a number of important changes in the construction grants program - changes that will further advance the Administration's objective of strengthening the State and local role in government.

An important provision of the Amendment is assuring that the grant funds are spent on projects that will contribute the most to water quality improvements. To accomplish this, each state in EPA Region 6 determines through a priority ranking system the order in which construction grant projects are funded. In formulating the priority list, the Oklahoma State Department of Health considers the wastewater treatment problems and needs of the municipalities that apply for a Federal grant.

Under the old law, communities had until July 1, 1983 to bring their treatment facilities up to a secondary treatment level. The Amendments extended this deadline an additional five years until July 1, 1988.

October 1, 1984 is another significant date in the new Amendments. Prior to that time, the grant program will continue much as it has in the past with the types of construction eligible for grants and the federal 75 percent grant level continuing. After that date, only secondary and advanced treatment, correction of infiltration/inflow and interceptor sewers will be eligible and the federal share will decrease to 55 percent. In the case of alternative/innovative projects, the 85 percent federal share will continue until October 1, 1984, when it will drop to 75 percent.

Before adoption of the 1981 Amendments, EPA would have had to spend some $90 billion for construction grants by the year 2000 to satisfy wastewater treatment facilities needs of the States. The revised program through the lower Federal share and limited funding eligibility -- trims the total to $36 billion by the year 2000. This is a reduction of 60 percent.

Since 1972, EPA has made about $33 billion in construction grants. These funds have gone to about 22,000 projects for planning, design and construction of wastewater collection and treatment facilities. Only about 3,700 of these have been completed because in the past it has taken seven to ten years to complete a project after the initial funds were awarded. The 1981 Amendments provide for streamlined procedures which should reduce this lengthly time period.

Phillip Smith - 1) The six years that we have left available to us to secure funding for this project are going to work a very severe hardship on the City of Tulsa. 2) We have other needs beside this plan, any additional time we could get would be greatly appreciated.

Response - Since Congress set the 1988 compliance date, which they extended from 1983, EPA is powerless to extend this deadline further.

4. Developing the Preferred Alternative

It was the recommendation of Public Advisory Committee (PAC) at their April 20, 1982 meeting that the preferred alternative be:

a. The AWT process train employing biological fitration with activated sludge. This was selected as the most cost-effective alternative over the alternative with the least present worth (AWT with breakpoint chlorination) because of environmental and health concerns associated with the use of highly reactive chemicals in the latter.

   Due to funding constraints associated with a project of this size, a method of phasing or staged construction of the preferred alternative was proposed and recommended by the City and adopted by the PAC during the June 1, 1982 PAC meeting. This approach would allow for funds, as they become available, to be applied to the more critical areas of the wastewater and sludge management portions of the project. In addition, the phasing plan would allow the existing plant to be operated in such a way that progressive levels of improvements in water quality can be accomplished as directed by the AO and continued with subsequent expansions and additions of AWT unit processes.

b. The "marketing" alternative for residual solids could include one or more of the reuse alternatives explored by the consultants, including give-away/sale use as a fertilizer/soil conditioner on active strip mines or agricultural lands. As a part of this primary alternative, a marketing plan would be developed by the City.

   Other alternatives were ranked in terms of their potential for use as "backup" alternatives to marketing, in the event that all the sludge could not be utilized at all times for marketing. That ranking was:

   1) RA-6 - reclamation of abandoned strip mines at Site R-3;

   2) Reclamation at another strip mine site (i.e., R-1, R-2, or R-4);

3) Codisposal at a permitted sanitary landfill;

4) Renewed siting efforts in Tulsa County; avoiding prime agricultural lands; and

5) LF-1 in Okmulgee County.

The process by which each final alternative was recommended for the wastewater and residual solids management portions of the project is described below:

° CH_2M Hill prepared reports describing its detailed analysis and generalized cost estimates of each alternative.

° CDM prepared reports describing its assessment of the environmental impact of each alternative.

° PAC reviewed, discussed, and assessed these analyses at its March and April meetings.

° The Utility Board reviewed the reports at its April 7, 1982 meeting.

° At an April 15, 1982 meeting, TWSD staff recommended that the Utility Board and the City Commission adopt MA-16 and marketing with RA-6 as a backup as the final alternatives.

° The PAC reviewed the staff's recommendations at its April 20, 1982 meeting.

° The PAC adopted MA-16 and RA-6 as a backup to marketing and landfilling on Class 1 soils as a last resort.

° The Utility Board, at its April 21, 1982 meeting, adopted the staff's recommendations with the following stipulations:

  - landfilling sludge in areas containing Class 1 soils should be considered only as a last resort, as recommended by the PAC;
  - when implementation and scheduling details of the selected alternatives are developed, the Utility Board will review them for approval.

° On April 23, 1982, the City Commission approved the selection of MA-16 and marketing with a backup of RA-6 as the final alternatives, as recommended by the Utility Board.

5. Evaluation of Public Participation Program

a. EPA

Based on regulations and guidance, the TWSD prepared an approved work plan for a public participation program and implemented that plan exceptionally well.

A corps of interested citizens followed the project as a Public Advisory Committee, learning, commenting, and choosing among alternatives for facilities planning and sludge management. The people of Tulsa generally were given many opportunities to learn of and participate in the planning process. Comments and suggestions where valid were incorporated into the final plan.

Opposition from residents of Rogers County to the disposal of sludge as a soil conditioner in the strip mine reclamation areas was predictable. Despite early consultation and education efforts, with representatives of Rogers county on the Public Advisory Committee, and with continuing media coverage, citizens became interested in the proposed sludge management plan late in the process when local efforts were formally organized to oppose it. That opposition successfully eliminated at that time consideration of the Rogers County abandoned strip mines for Tulsa's sludge disposal.

b. TWSD

A letter from TWSD (included in Appendix F) indicates that the City's evaluation of the public participation program is reflected in the responses from three of the forty PAC members. (Tenure on the PAC of these members varies from 6 to 30 months).

Respondants indicate strong approval of all areas of the program, with the following exceptions:

a. Non-technical summaries of complex or lengthy documents were not always available.

b. Informational materials were not always provided to PAC members in a timely manner.

c. Issues were not always clearly stated.

d. All areas of geographic focus were represented except for representatives of county governments.

e. All agencies were most cooperative, except for EPA which "did not begin to fulfill its obligation to the City nor to the public."

PART III. MODIFICATIONS AND CORRECTIONS TO THE DRAFT EIS

A. INTRODUCTION

Ordinarily, this section (Part III) of EPA's Final EIS contains revisions made to the Draft EIS based on errors and/or omissions identified during public review or resulting from the review by EPA, TWSD and the EIS contractor. However, this approach is not appropriate in this case since portions of the project are not ripe for decisions and must therefore be subject to a subsequent statement or analysis. This section instead presents an assessment for those portions of the project on which a decision or Federal action has been proposed at this time. Specifically, it includes the environmental impacts of EPA's proposed funding for construction and operation of the Multifunctional Laboratory Building and five acres of sludge drying beds and the remaining secondary treatment expansion at Northside. The review of these items would not foreclose any options on other features which will be scheduled for review at a more appropriate point in the planning process.

B. ENVIRONMENTAL CONSEQUENCES OF PROJECT ALTERNATIVES

This section includes more specific environmental assessment for those elements of the project (summarized in Part III.A. and outlined in Part I.C.) for which decisions and Federal (funding) actions are proposed at this time. Similar detailed assessments of environmental impacts for remaining portions of Tulsa's overall wastewater treatment program will be prepared when decisions are reached on the following: the preferred alternatives for advanced wastewater treatment (AWT) at the Northside facility; the City-wide sludge management plan; and the Northside collection system.

The project elements on which decisions are pending and to which this Final Environmental Impact Statement (FEIS) apply are the following:

- The expansion of the Northside Multifunctional Laboratory Building to provide laboratory, office, and storage space essential to the ultimate implementation of the Northside WWTP, the City-wide sludge management plan and the industrial waste pretreatment program.
- The expansion and upgrading of the Northside Wastewater Treatment Plant to provide secondary treatment requirements for 42.6 mgd total design capacity by 1985.
- The addition of five acres of sludge drying bed facilities for the Southside plant to provide sludge treatment capacity to meet projected sludge quantities.

1. Northside Multifunctional Laboratory Building Expansion

The proposed Northside Lab Building, an approximately 8,300 square foot structure, will be constructed on a site adjacent to and immediately northwest of the existing laboratory and maintenance building (see Figure III-1). The new facility is to provide laboratory and office space for the expanded Northside operational staff; for the proposed industrial waste pretreatment program; and for the residual solids (sludge) management program.

No Action

The most direct and immediate affect of a No Action decision for the Northside Multifunctional Laboratory Building would be the inability of the Tulsa Water and Sewer Department (TWSD) to meet minimum process control and testing requirements for the expanded Northside Wastewater Treatment Plant operations. The new lab facility is needed now in order to be fully operational in time for the planned increase in treatment capacity at Northside from 30 mgd to 42.6 mgd. Another direct affect of No Action would be the temporary absence of any lab related construction impacts. This would be only a delay, however, in that the lab will have to be expanded at some point in the near future.

The No Action alternative for the overall Tulsa wastewater management program would result in:

- No laboratory space or equipment for the industrial waste pretreatment program.
- No laboratory facilities for the residual solids monitoring and testing required for the sludge reuse/marketing program.
- No laboratory facilities for the ground and surface water monitoring/-testing requirements of the backup sludge disposal program(s).

For the City of Tulsa, a No Action decision for the Northside Lab could delay the implementation of its proposed wastewater management, residual solids management and industrial waste pretreatment programs. For those reasons, the City has rejected this alternative.

Impacts on the Affected Environment

The proposed multifunctional laboratory building will occupy a small area in the north central part of the existing Northside WWTP site (see Figure III-1). The building will face west onto North 105th E. Avenue, bounded on the north by Basin Road, to the east by the existing shop and lab building and to the south by a paved road leading to the existing trickling filter system.

The area to be disturbed by the construction of the new lab facility is about 17,000 square feet, presently devoted to landscaped areas of grass and a few trees/shrubs, walkways, and curb and guttered areas. The disturbed area will contain not only the new lab building, but 22 new parking spaces as well*. The area surrounding the lab construction area is

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* City of Tulsa, Oklahoma Water and Sewer Department, Predesign Memorandum, Northside WWTP, May 1983.

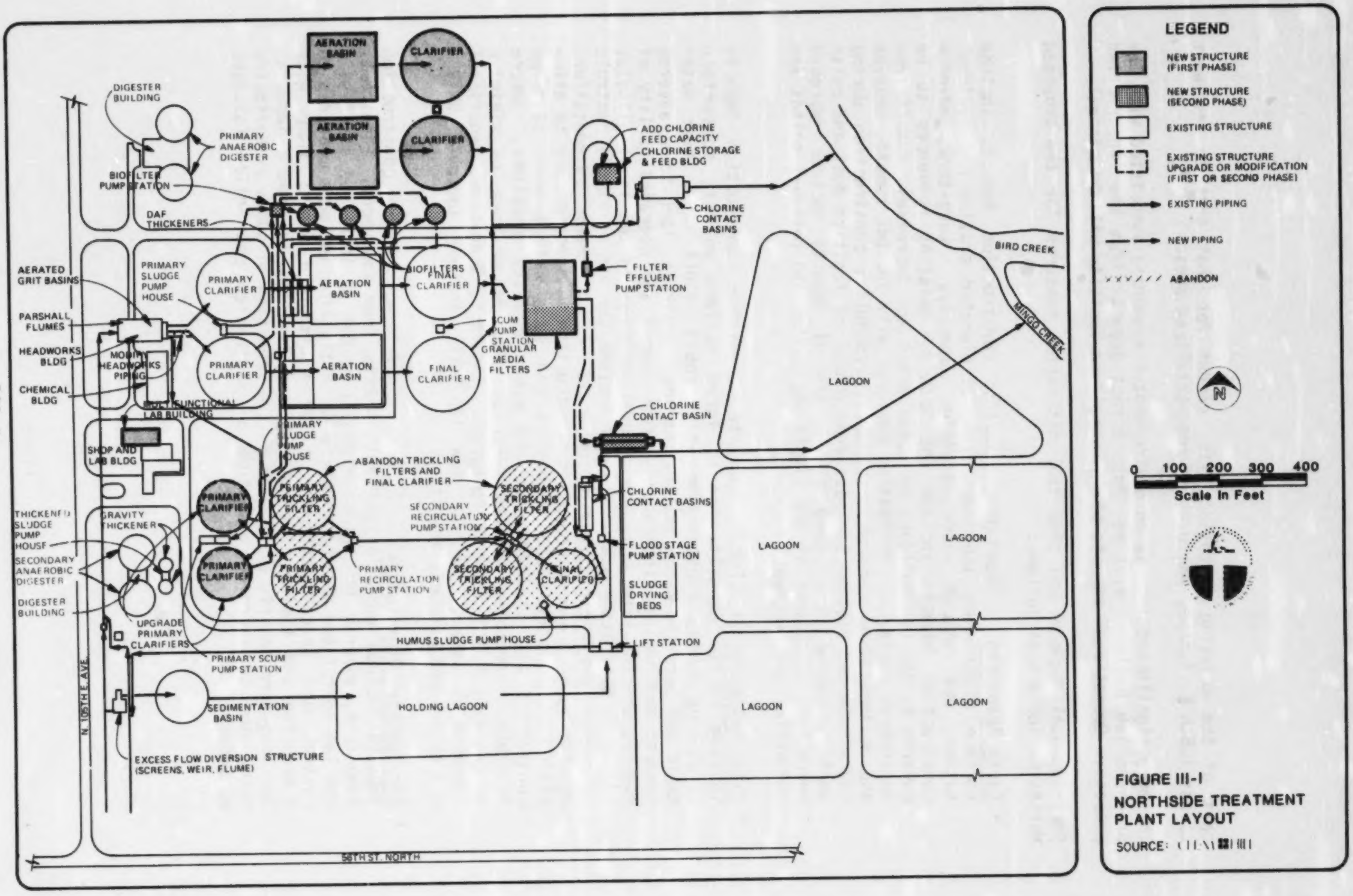
LEGEND
NEW STRUCTURE (FIRST PHASE)
NEW STRUCTURE (SECOND PHASE)
EXISTING STRUCTURE
EXISTING STRUCTURE UPGRADE OR MODIFICATION (FIRST OR SECOND PHASE)
EXISTING PIPING
NEW PIPING
ABANDON
N
0 100 200 300 400
Scale In Feet
DIGESTER BUILDING
PRIMARY ANAEROBIC DIGESTER
BIOFILTER PUMP STATION
DAF THICKENERS
AERATION BASIN
AERATION BASIN
CLARIFIER
CLARIFIER
ADD CHLORINE FEED CAPACITY
CHLORINE STORAGE & FEED BLDG
CHLORINE CONTACT BASINS
AERATED GRIT BASINS
PRIMARY SLUDGE PUMP HOUSE
PRIMARY CLARIFIER
PRIMARY CLARIFIER
AERATION BASIN
AERATION BASIN
BIOFILTERS
FINAL CLARIFIER
FINAL CLARIFIER
FILTER EFFLUENT PUMP STATION
SCUM PUMP STATION
GRANULAR MEDIA FILTERS
PARSHALL FLUMES
HEADWORKS BLDG
MODIFY HEADWORKS PIPING
CHEMICAL BLDG
MULTIFUNCTIONAL LAB BUILDING
SHOP AND LAB BLDG
PRIMARY SLUDGE PUMP HOUSE
ABANDON TRICKLING FILTERS AND FINAL CLARIFIER
PRIMARY CLARIFIER
PRIMARY CLARIFIER
PRIMARY TRICKLING FILTER
PRIMARY TRICKLING FILTER
PRIMARY RECIRCULATION PUMP STATION
SECONDARY RECIRCULATION PUMP STATION
SECONDARY TRICKLING FILTER
SECONDARY TRICKLING FILTER
FINAL CLARIFIER
CHLORINE CONTACT BASIN
CHLORINE CONTACT BASINS
FLOOD STAGE PUMP STATION
SLUDGE DRYING BEDS
THICKENED SLUDGE PUMP HOUSE
GRAVITY THICKENER
SECONDARY ANAEROBIC DIGESTER
DIGESTER BUILDING
UPGRADE PRIMARY CLARIFIERS
PRIMARY SCUM PUMP STATION
HUMUS SLUDGE PUMP HOUSE
LIFT STATION
SEDIMENTATION BASIN
HOLDING LAGOON
EXCESS FLOW DIVERSION STRUCTURE (SCREENS, WEIR, FLUME)
N. 105TH E. AVE
56TH ST. NORTH
BIRD CREEK
MINGO CREEK
LAGOON
LAGOON
LAGOON
LAGOON
LAGOON

FIGURE III-I
NORTHSIDE TREATMENT PLANT LAYOUT

SOURCE: CH2M HILL

part of the existing Northside site, except for that area to the west across 105th E. Avenue, which is an industrialized area.

The more significant impacts on environmental resources associated with the proposed lab building will be those direct impacts from the construction process. Operational impacts of the completed facility will be minimal.

Environmental impacts and potential mitigation measures for the proposed Northside lab are as follows:

- Earth Resources - Short-term, adverse construction impacts include surface disturbance and compaction, accelerated erosion and sedimentation, and reduced water retention capacity. Long-term, adverse construction impacts include the loss of existing resources to be covered by the new building or paved areas and increased runoff from impervious surfaces. Mitigation measures will include runoff, erosion and sedimentation control procedures; scheduling construction during low wind/water erosion periods; and control of fugitive dust and noise during construction. Long-term beneficial impacts include improved operations/management of the City's wastewater and residual solids and industrial pretreatment programs.

- Water Resources - Direct, short-term, adverse construction impacts include increased siltation of local surface waters, subsurface dewatering during construction which could result in a lower water table and possible water quality changes. Indirect, long-term, adverse impacts may include increased surface runoff and degraded quality of runoff; and possible decreased natural recharge to the local alluvial aquifer. Mitigation measures shall include the use of runoff controls to detain and treat runoff in order to reduce stream sedimentation. Dewatering of groundwater during construction will occur only to allow efficient construction procedures and such waters will also be controlled and treated to avoid water quality problems. Where feasible, permeable materials will be retained or used to minimize excess runoff and loss of recharge. Indirect, long-term, beneficial operational impacts of the new lab will include improved WWTP's operations and effluent quality.

- Air Quality; Odor; Noise - Direct, short-term, adverse construction impacts include dust, noise and exhausts from equipment. Indirect, long-term, adverse impacts on air quality due to increased staff site and lab operations should be minimal. Mitigation includes measures to control dust (e.g. wetting or mulching disturbed areas) along with scheduling and timing of construction activities to reduce impacts. One long-term benefit of the lab is the reduction of odors at Northside sites due to improved operation of wastewater and solids (sludge) management.

- Biological Resources - Direct, short-term, adverse construction impacts include losses of vegetated areas. Mitigation measures include transplanting vegetation if feasible.

- Archeological/Historical Resources - No adverse impacts are expected from construction or operation. Mitigation includes coordination with Oklahoma State Historical Preservation Officer (OKSHPO) if cultural resources are identified during construction.

- Socio-Economic/Land Use Factors - Minor, direct, short-term, adverse construction impacts and direct, long-term, adverse operation impacts include increased traffic on local roads. Secondary, adverse impacts are not likely due to off-site land use changes. Short-term traffic impacts will be minimized by construction scheduling and management. Long-term operational, beneficial impacts include increased employment opportunities and improved water quality in receiving streams.

- Energy and Other Resources - Direct, short-term, adverse construction and direct, long-term, adverse operational impacts include increased energy use, O&M funds, labor and materials. Mitigation measures include energy conservation practices both during and after construction and efficient management/operation of the facilities to minimize costs.and commitments of other resources.

2. Northside Wastewater Treatment Plant Expansion - Phase One

The proposed Phase One expansion of the Northside WWTP is designed to increase the plant's capacity to 42.6 mgd, eliminate the old trickling filter system, and maintain interim secondary treatment standards. The expansion includes adding two 9.65 mgd activated sludge systems, upgrading the primary clarifiers of the old trickling filter train, adding the new multifunctional lab facility, and enhancing the nitrification capability to provide an improved effluent quality until projected inflows approach design capacity.

This expansion/upgrading of the Northside facility conforms with the proposed phased implementation of preferred alternative MA-16, as presented in the Northside 201 Facilities Plan. MA-16 provides for eventual advanced wastewater treatment at Northside with continued discharge of treated effluent to Bird and Mingo Creeks. The major components of MA-16 are biological filters, activated sludge and granular media filters. The planned Phase One changes at Northside are shown on Figure III-1.

Implementation of MA-16 will be phased to take advantage of significant cost effectiveness benefits due to phasing. This phasing approach, and the proposed first phase implementation, will provide the projected design year capacity, but not the ultimate design year quality. The first phase will include:

- Adding the Multifunctional Laboratory Building.

- Modifying headworks piping.

- Upgrading the primary clarifiers in the old trickling filter system.

- Abandoning the remaining trickling filter system.
- Adding two aeration basins.
- Adding two clarifiers.
- Adding eight granular media filters.
- Adding a granular media filter effluent pump station preceding the north chlorine contact basins.

Completion of the first phase of MA-16 will provide BOD reduction and nitrification in the activated sludge system and final BOD reduction and TSS reduction in the granular media filtration units. Expected effluent quality from the expanded Northside facility may be better than present interim standards (20 mg/l BOD and 30 mg/l TSS), and permit limits of 5 mg/l BOD, 5 mg/l TSS and 3 mg/l NH_3 should be achieved by 1988. Nitrification capacity should be adequate to about 1990/1991 except for cold season losses. Recent plant operations with improved capacity and nitrification have demonstrated BOD and TSS levels in the 5 to 15 mg/l range. These levels will increase as influent increases.

The City intends to proceed with necessary planning, model verification and alternative evaluation in order to secure EPA approval for future AWT objectives for the Northside plant.

No Action

A No Action alternative for Phase One of MA-16 would result in an indefinite continuation of secondary treatment effluent quality levels and the inability of the plant to achieve NPDES limits (5 mg/l BOD, 5 mg/l TSS and 3 mg/l NH3) by the required July 1, 1988 date. Other problems identified with a No Action decision for Northside expansion could be:

- Increased organic loadings of Bird Creek, particularly during low flow conditions.
- Gradual increase in ammonia (NH3) concentrations downstream of the plant to levels potentially toxic to most fish species.
- Continuation of existing 30 mgd capacity could force a moratorium on new sewer connections in the service area and possibly an increase in on-site waste disposal systems with possible resultant surface and groundwater quality problems.
- Future growth in residential, commercial and industrial activities in the expanded Northside Service Area would be constrained by inadequate wastewater treatment capacity.

The No Action alternative for the Northside WWTP expansion would eliminate the impacts of construction at the plant site and some associated growth impacts in the plant's service area.

The City of Tulsa will not be able to achieve EPA permit requirements for effluent quality from the Northside plant by the 1988 target date unless the Phase One expansion is implemented now. Any extended delay in bringing this facility on-line to serve the larger Northside Service Area will not only prohibit meeting effluent standards, but may constrain the City from developing an effective industrial waste pretreatment program and an environmentally acceptable solids reuse/disposal plan as well.

The lack of increased treatment capacity and improved effluent quality at Northside due to No Action would limit the TWSD's options for compliance with requirements of the Clean Water Act. The City's overall wastewater management program is in question until satisfactory solutions for Northside problems are resolved. The proposed phased approach to Northside expansion offers the most cost effective and feasible approach to meeting program requirements.

The City of Tulsa's commitment to meet EPA permit requirements by the mandated 1988 date resulted in rejection of the No Action alternative as unacceptable.

Impacts on the Affected Environment

The Northside Wastewater Treatment Plant expansion (Phase One) will be restricted to the existing plant site off North 105th E. Avenue, to the northeast of the Tulsa International Airport. The plant is situated in a predominantly agricultural use area between U.S. 169 to the east and an industrializing area along the AT&SF RR to the west, about three miles northeast of the Airport (see Figure III-1a). The plant lies in the Bird and Mingo Creek drainage basins at the confluence of the two streams. The entire plant site is protected by levees from the 100-year frequency flood event of either stream.

The Northside plant site covers about 105 acres, with the eastern third on floodplain alluvium associated with Mingo Creek, the central portion overlies a Nowata shale formation, and the western third on undifferentiated terrace deposits. With regard to soils in the project, the eastern third of the site is Osage silty clay, the central part is Wyona silty clay loam and the western third is predominantly Okay loam*. Those portions of the plant site to be affected by the proposed Northside expansion lie in the western and central parts of the site.

The potential environmental impacts associated with the construction and future operations of the expanded (Phase One) Northside WWTP are organized into the following categories, with environmental impacts, and mitigation measures indicated:

- Earth Resources - Short-term, adverse construction impacts will be clearing, leveling, compaction and accelerated erosion of sites for new units at Northside. The area of the plant to be disturbed by construction of the two new activated sludge trains has previously been

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*DEIS, Wastewater Treatment Facilities, Tulsa (Northside), Oklahoma, December 1982, pp. 3-28 & 29.

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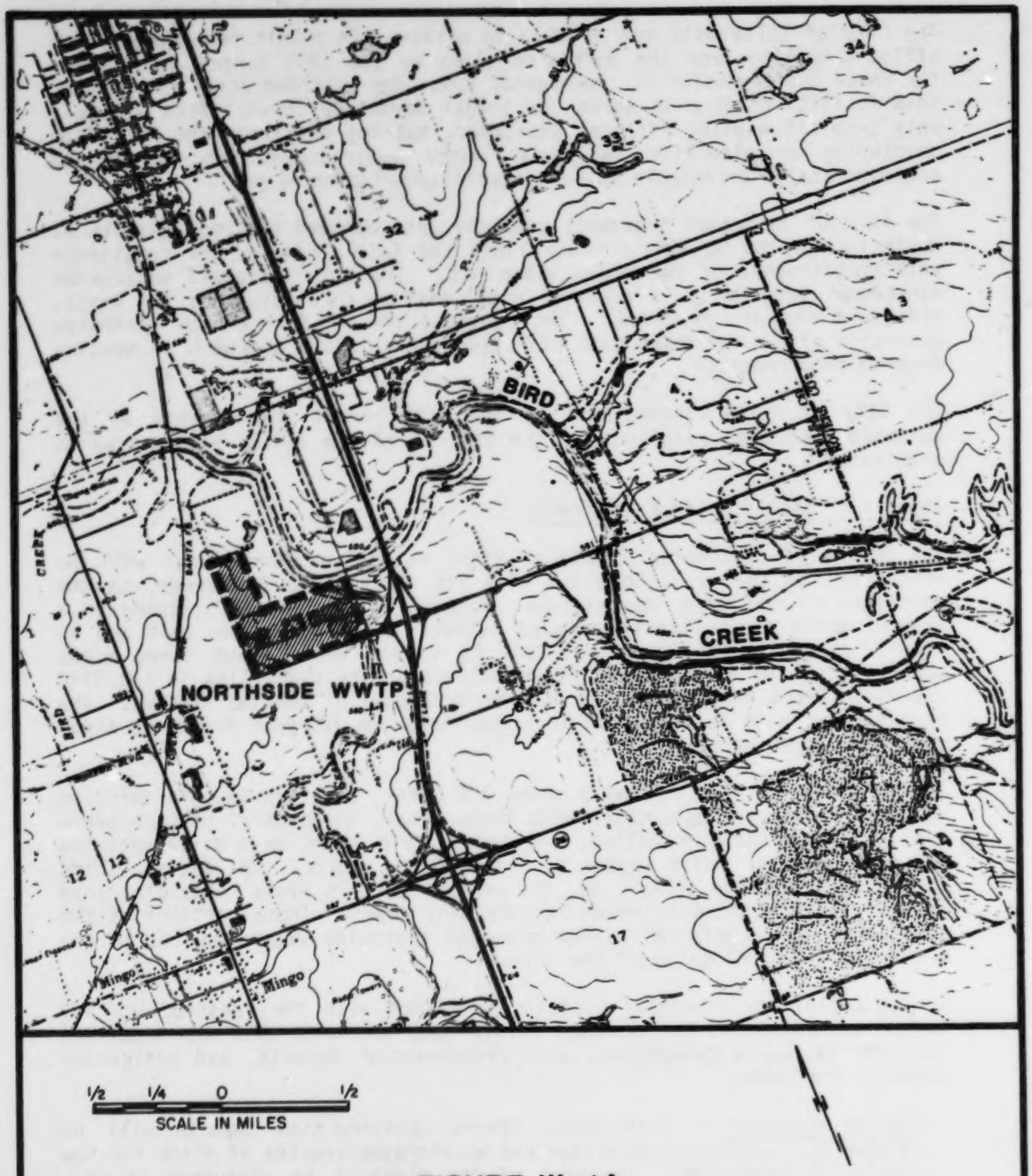
34
33
32
31
3
BIRD
CREEK
NORTHSIDE WWTP
CREEK
BIRD
12
12
17
Mingo
Mingo
1/2 1/4 0 1/2
SCALE IN MILES
N

FIGURE III-1A
NORTHSIDE WASTEWATER TREATMENT PLANT LOCATION

CAMP DRESSER & MCKEE INC.

used for stockpiling dewatered sludge and does not represent the loss of a previously undisturbed area. A long-term adverse impact will be the commitment of a larger land area for the expanded operations. Mitigation measures include erosion control and runoff retention/treatment to minimize off-site sedimentation; limitation of areas disturbed by construction; revegetation of disturbed areas as soon as practical; and early resolution of current (temporary) sludge management problems. Potential, long-term beneficial impacts from the Northside expansion include improved wastewater and sludge management and effluent qualities.

- Water Resources - Direct, short-term, adverse construction impacts include some groundwater loss due to dewatering and potential water quality changes. Potential adverse construction impacts are increased runoff and degraded water quality in nearby streams. Also, expanded capacity and service area for the WWTP may result in intrusion into flood hazard zones by new collector system elements. Mitigation measures will include minimizing groundwater pumping/water table effects during construction, and control and treatment of waters before release to local surface waters to reduce quality changes. A sewer system improvement plan for the expanded Northside facility will be selected to avoid flood hazard area impacts where possible. Long-term beneficial impacts will be significantly improved effluent quality released to Bird and Mingo Creeks and an increased effluent quantity (55 to 65 cfs) to provide a more dependable streamflow in Bird Creek during low flow conditions.

- Air Quality; Odor; Noise - Direct, short-term, adverse construction impacts include fugitive dust, exhaust fumes, increased noise levels, and possible odors. Potential long-term, adverse construction impacts include some small increase in emissions/noise at the expanded treatment plant. Mitigation measures will include procedures to control dust and other nuisance factors during construction; scheduling construction activities to avoid unnecessary disturbance to nearby areas; and the careful management of disturbed sludge storage areas to reduce odor problems. Long-term beneficial impacts will be reduced local odors due to the abandonment of the obsolete trickling filter system, and improved overall plant operations to result in better control over air quality and nuisance factors.

- Biological Resources - Direct, short-term, adverse impacts include some loss of vegetation and habitat at construction sites, although such losses will be minimal. Any long-term adverse impacts on local flora or fauna will be negligible, except for indirect effects due to growth in urban lands uses in the service area. Mitigation measures include minimizing vegetation and habitat disturbance during construction and the restoration of such areas soon after construction is completed; limiting the use of pesticides, herbicides or defoliants at the site; and the protection of nearby surface waters. Long-term beneficial impacts include improved water quality in receiving streams and resultant improved aquatic habitat in Bird Creek and downstream in the Verdigris River.

- Archeological and Historical Resources - No direct adverse construction impacts are expected. Long-term adverse impacts may occur in the service area due to urban growth facilitated by the enlarged Northside plant, but no significant impacts are known. Mitigation measures include continuing surveys of the area as future improvements are made, with evaluation, relocation or salvage as necessary.

- Socio-Economic and Land Use Factors - Direct short-term, adverse impacts may include some traffic and utility disruptions near construction sites. Indirect, long-term adverse impacts may include loss of some important agricultural lands in the service area due to future urban growth; potential increase in water/wastewater utility rates to finance new facilities; and intensified land uses in the expanded service area. Mitigation measures include planning and scheduling construction activities to minimize traffic/utility disruptions; use of alternative financing arrangements to lower wastewater improvement costs; and continued planning for future urban growth to reduce losses of agricultural and other critical land uses. Long-term beneficial impacts include improved service capacity.

- Energy and Other Resources - Direct, short-term, adverse impacts include an increased commitment of energy, capital, labor and other resources during the construction phase. Long-term adverse impacts include increased energy consumption for the operation of the expanded Northside facility, along with increased staff and support facilities. Mitigation measures include the capture and use of methane gas produced from the treatment processes, and the beneficial reuse/sale of treated sludge. Long-term beneficial impacts include expanded wastewater treatment capacity, and the recovery of the energy values from the treatment processes.

3. Southside Sludge Drying Bed Additions

An eventual system-wide solids management and beneficial reuse program for the City of Tulsa is based on the construction of five acres of new sludge drying beds for the Southside facility. These drying beds will permit the City to begin implementation and evaluation of the recommended solids management program detailed in the Solids Plan. The initial five acres are approximately 20 percent of the 24 acres of new drying beds at the Southside plant required by the design year 2005, as estimated in the Solids Plan.

The proposed new Southside drying beds will be located approximately two miles south of the Southside WWTP near the site of existing storage lagoons and abandoned (no longer serviceable) drying beds. Figure III-2 and Figure III-3 illustrates the location and relationship of the new drying beds to the Tulsa Southside Plant and to the existing storage lagoon area.

The proposed design of the new drying beds call for 14 beds, each 125' X 125' in dimension*. The new drying bed facilities will include a decant

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*TWSD, Design Memorandum, Northside WWTP, Southside Drying Beds, May, 1983.

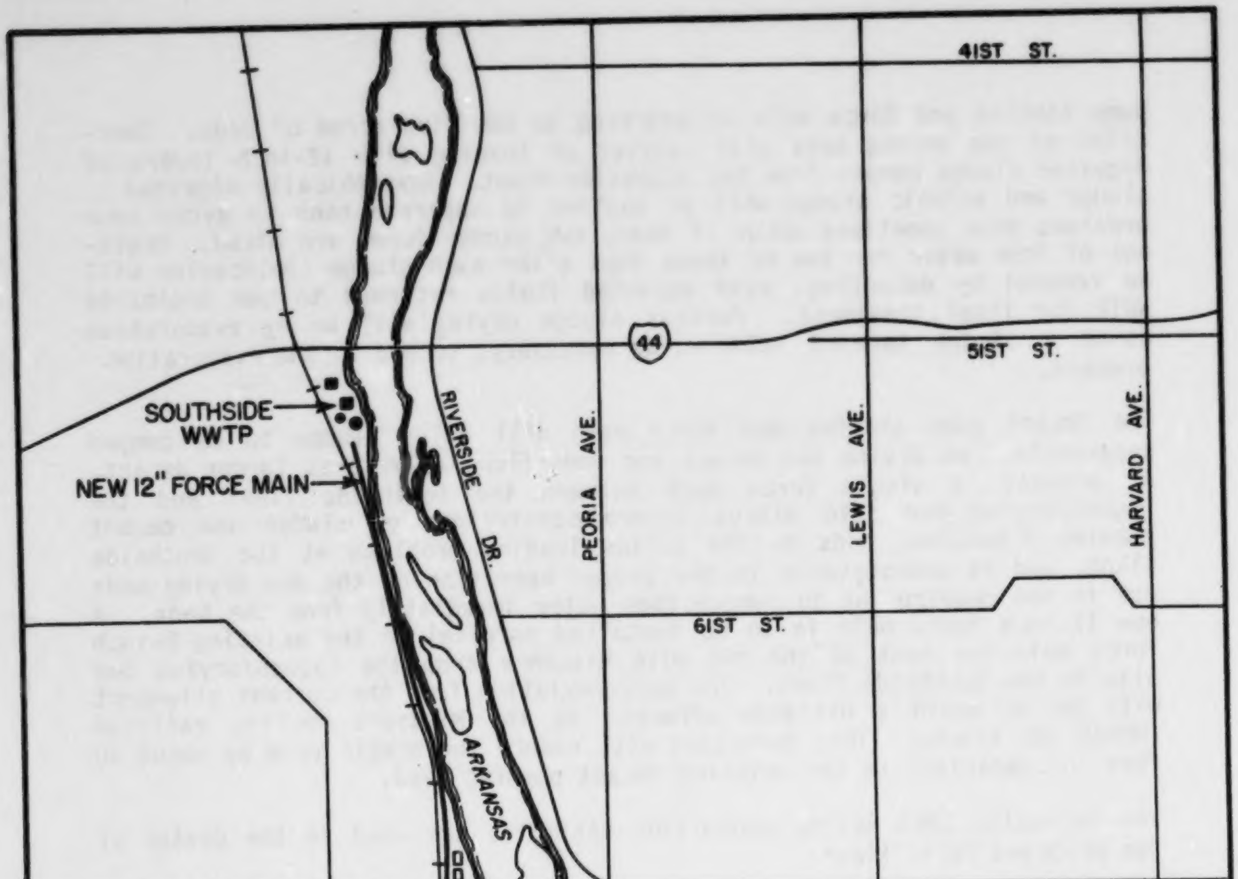
41ST ST.
51ST ST.
44
SOUTHSIDE WWTP
NEW 12" FORCE MAIN
RIVERSIDE DR.
PEORIA AVE.
LEWIS AVE.
HARVARD AVE.
61ST ST.
ARKANSAS
71ST ST.
NEW FIVE ACRE DRYING BEDS
NEW DECANT PUMP STATION
LAGOON (UNDER CONSTRUCTION)
PROPOSED 71ST ST. BRIDGE
RIVER
MOPAC RAILROAD
0
1/2
1 Mile
SCALE
N

FIGURE III-2

SOUTHSIDE WWTP, LAGOON, AND DRYING BEDS

SOURCE: CH2M HILL

pump station and force main in addition to the five acres of beds. Operation of the drying beds will consist of loading with 12-inch layers of digested sludge pumped from the Southside Plant. Anaerobically digested sludge and aerobic sludge will be applied to separate beds to avoid odor problems that sometimes occur if these two sludge forms are mixed. Drainage of free water for two or three days after each sludge application will be removed by decanting, with decanted fluids returned to the Southside WWTP for final treatment. Further sludge drying will be by evaporation using a sludge turning vehicle, as necessary, to aid in the evaporation process.

The decant pump station and force main will allow sludge to be pumped separately from drying bed decant and underflow, as well as lagoon decant. At present, a single force main between the Southside Plant and the lagoon/drying bed site places severe constraints on sludge and decant pumping schedules, adds to the solids loading problems at the Southside Plant, and is unacceptable to the proper operation of the new drying beds due to the requirement to remove free water immediately from the beds. A new 12-inch force main is to be installed parallel to the existing 8-inch force main for most of the two mile distance from the lagoon/drying bed site to the Southside Plant. The only deviation from the current alignment will be to avoid a hillside adjacent to the Missouri Pacific railroad (MOPAC RR) tracks. This deviation will reduce the static head by about 30 feet in comparison to the existing decant pumping head.

The following 1983 solids production estimates are used in the design of the proposed facilities*:

- Anaerobic sludge - 10.5 dry tons/day, at solids content of 3.5 percent; or 500,000 gal/wk piped to the lagoons.

- Aerobic sludge - 10.4 dry tons/day, at solids content of 0.8 percent; or 2,200,000 gal/wk sent to lagoons.

The design of the current facilities for solids management at Southside is compatible with the projected conditions for design year 2005.

Design details for the five acres of drying beds and their locations are as follows:

- The five acres of new sludge drying beds will be located west of existing Lagoon No. 5 and No. 6, as shown on Figure III-3. This will require the removal of some brush and trees, and some leveling of the site. Also shown in Figure III-3 are the new decant pump station, yard piping and the force main.

- The northern edge of the proposed drying beds will be located approximately 100 feet inside the City property/Highway Department right-of-way line, or about 300 feet from the centerline of the new 71st Bridge across the Arkansas River.

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*TWSD, Predesign Memorandum, Southside Drying Beds, etc., May 1983.

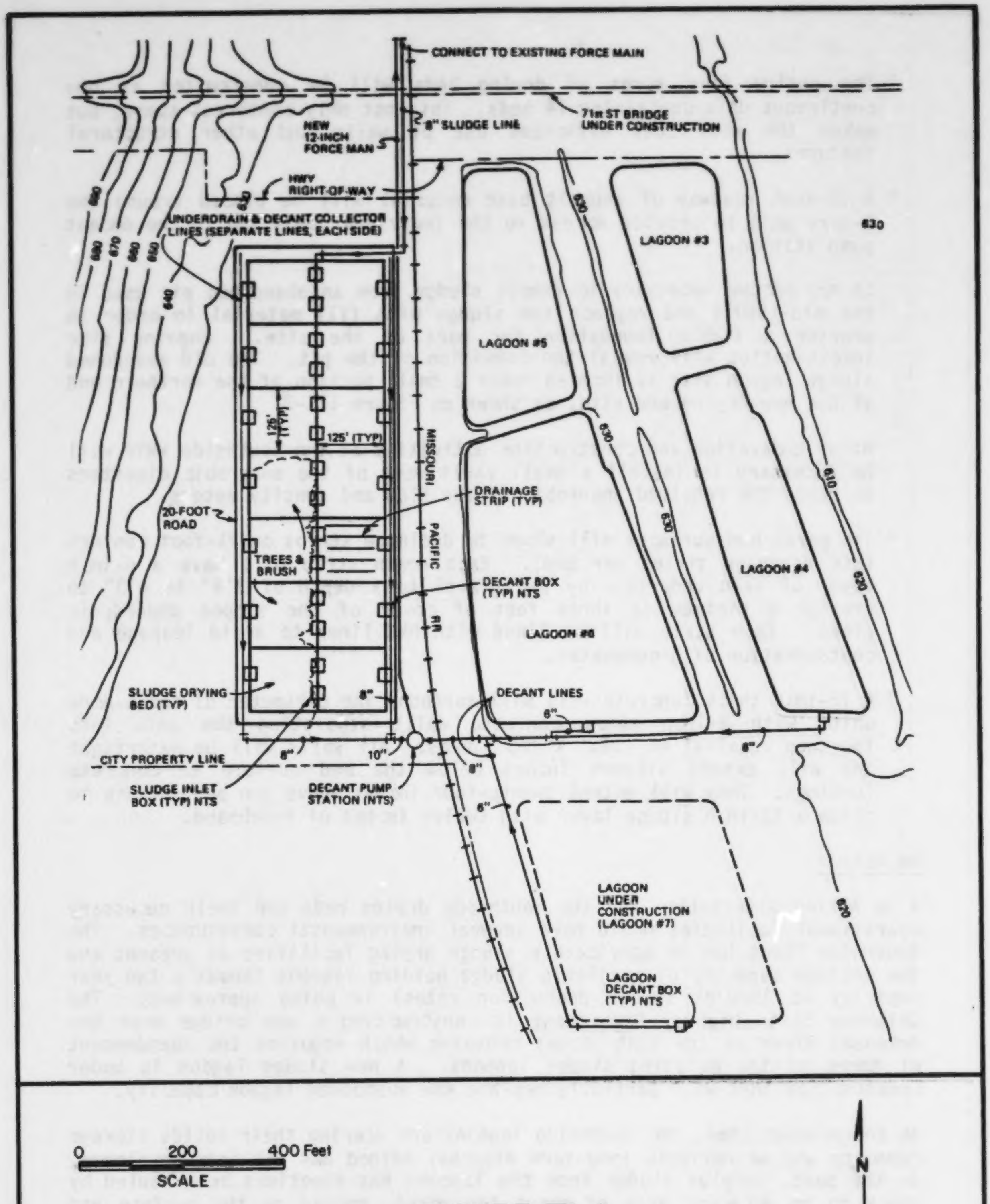
CONNECT TO EXISTING FORCE MAIN
NEW 12-INCH FORCE MAIN
8" SLUDGE LINE
71st ST BRIDGE UNDER CONSTRUCTION
HWY RIGHT-OF-WAY
UNDERDRAIN & DECANT COLLECTOR LINES (SEPARATE LINES, EACH SIDE)
690
680
670
660
650
640
630
LAGOON #3
LAGOON #5
LAGOON #4
LAGOON #6
125' (TYP)
125' (TYP)
MISSOURI PACIFIC RR
DRAINAGE STRIP (TYP)
20-FOOT ROAD
TREES & BRUSH
DECANT BOX (TYP) NTS
610
620
SLUDGE DRYING BED (TYP)
8"
DECANT LINES
6"
10"
CITY PROPERTY LINE
SLUDGE INLET BOX (TYP) NTS
DECANT PUMP STATION (NTS)
LAGOON UNDER CONSTRUCTION (LAGOON #7)
LAGOON DECANT BOX (TYP) NTS
0
200
400 Feet
SCALE
N

FIGURE III-3

DRYING BED SITE

SOURCE: CH2M HILL

- The entire five acres of drying beds will be constructed as one continuous unit containing 14 beds. This not only conserves space, but makes the most cost efficient use of walls and other structural features.

- A 20-foot roadway of asphalt base material will be placed around the 5-acre unit to provide access to the individual beds and to the decant pump station.

- It may become necessary to remove sludge from an abandoned pit used in the mid-1960's and replace the sludge with fill material in order to provide a stable foundation for part of the site. Ongoing site investigation will reveal the condition of the pit. The old abandoned sludge lagoon site is located under a small portion of the northern end of the new drying bed site, as shown on Figure III-3.

- Minor excavation and construction activities at the Southside WWTP will be necessary to install a small vault west of the anaerobic digesters to house the required anaerobic sludge flow and density meters.

- The paved bed surfaces will slope to drainage strips on 21-foot centers (six drainage strips per bed). Each drain strip will have a 6-inch layer of sand underlain by pea gravel to a depth of 3'9" to 4'3" to provide a minimum of three feet of cover of the sloped underdrain pipes. Each strip will be lined with PVC liner to avoid leakage and contamination of groundwater.

- A 12-inch thick concrete wall will surround the perimeter of the 5-acre unit, with 8-inch thick concrete walls separating the unit into fourteen equal-sized (125' X 125') beds. All walls will be watertight and will extend sixteen inches below the bed surface to concrete footings. They will extend twenty-four inches above the bed surface to allow a 12-inch sludge layer with twelve inches of freeboard.

No Action

A No Action alternative for the Southside drying beds and their necessary operational facilities would have several environmental consequences. The Southside Plant has no serviceable sludge drying facilities at present and the maximum capacity of available sludge holding lagoons (about a two year capacity at 1980/81 sludge production rates) is being approached. The Oklahoma State Highway Department is constructing a new bridge over the Arkansas River at the 71st Street crossing which requires the abandonment of three of the existing sludge lagoons. A new sludge lagoon is under construction that will partially replace the abandoned lagoon capacity.

At the present time, the Southside lagoons are nearing their solids storage capacity and no reliable long-term disposal method has yet been developed. In the past, surplus sludge from the lagoons has sometimes been hauled by truck to an adjacent area of about ten acres, spread on the surface and then plowed into the soil. This is not an acceptable long-term sludge disposal alternative.

The preferred solids handling plan for the Southside plant, as described in the Areawide Residual Solids Management Plan (Solids Plan), calls for abandonment of all sludge lagoons except the new (under construction) lagoon. This single remaining lagoon will provide temporary (three month) storage capacity for the southside sludge in connection with the planned 24 to 26 acres of sludge drying beds planned for design year 2005.

The absence (No Action) of the initial 5-acre increment of drying beds for the Southside Plant will leave that facility with no acceptable sludge handling capacity in the near future (by 1985). Failure to implement the proposed first phase Southside drying bed installation will constrain the operations of the existing 31.5 mgd Southside plant and limit its effective utilization and ability to meet effluent quality standards. Other No Action consequences may be diminished water quality in the Arkansas River downstream of the Southside plant, land use impacts as additional temporary land disposal sites are required for accumulated sludge and potential public health and safety consequences. For these reasons the City has rejected No Action for the Southside sludge drying bed additions.

Impacts on the Affected Environment

The proposed installation of five acres of sludge drying beds immediately west of the existing lagoons (see Figure III-3) is designed to provide the Southside plant with an acceptable sludge management and disposal/-beneficial reuse alternative to the present stockpilng of sludge in the lagoons. The overall environmental consequences of the new drying beds are generally favorable, although construction impacts and related impacts on water, physical, biological, socioeconomic, and other resources are noted. The initial five acres of drying beds will be located on undeveloped portions of the City property at the existing sludge lagoon site. The new drying beds will require vegetation removal, site leveling and shaping, excavations and other site preparation will affect on about 277,000 square feet, with additional areas disturbed for the planned decant pump station, decant and sludge piping throughout the site, and the new two mile force main to the Southside plant.

The areas to be disturbed by the construction of the new Southside drying beds, the 12-inch force main, the new decant pump station, and other required facilities for this project element are described as follows:

- Drying Bed Site - This is a relatively flat area of existing grassland, brush and some trees, and an abandoned sludge disposal area along the north edge of the construction site, lying between the MOPAC RR right-of-way (ROW) to the east, and a steep area of rock outcroppings as part of the southern extension of South Turkey Mountain to the west. A total of about 7 to 8 acres of existing City property will be disturbed during construction of the drying beds and support facilities.

- New 12-inch Force Main - The new force main will be installed in the MOPAC RR ROW parallel to the existing 8-inch force main from the point it leaves the existing City property, immediately northeast of the drying bed site, along the west side of the ROW to about 4,000 feet north of the 71st Street crossing. At that point, the new 12-inch line will cross under the railroad tracks to the east side of the ROW and be installed parallel to an existing line of utility poles for about 2,600 feet, where it rejoins and parallels the exising 8-inch line as shown on Figure III-4. An area of trees fringing the Arkansas River embankment along the east side of the ROW is to be carefully protected during ditching and installation operations*.

- Decant Pump Station, Piping and Southside Flow and Density meters for Anaerobic Sludge Line - The new decant pump station and decant piping for both lagoons and drying beds are shown on Figure III-3. Those areas on existing City property and/or railroad ROW will be disturbed during construction, along with a small area at the Southside WWTP west of the anaerobic digesters where sludge flow and density meters will be installed.

The construction and operation impacts associated with the new drying beds and the associated facilities are organized into the following environmental resources categories, with discussion of environmental impacts and mitigation measures.

- Earth Resources - Short-term, adverse construction impacts include surface disturbance, devegetation, excavation/ditching/boring, accelerated erosion, runoff and sedimentation. Direct long-term adverse impacts will be the commitment of areas for drying beds and facilities, and the increased operational uses of the site during sludge processing and disposal activities. Mitigation measures include erosion control, runoff and sedimentation protection and treatment procedures to avoid on or off-site land damages; restriction of disturbed areas to the minimum necessary during construction and operations and the revegetation of disturbed areas as necessary; and scheduling/timing of construction to minimize duration of disturbances. Long-term beneficial impacts include elimination of existing sludge lagoons and stockpiling practices and improved management of the site.

- Water Resources - Direct, short-term, adverse construction impacts include any necessary dewatering of construction sites, temporary water quality changes due to runoff or dewatering, and possible local sedimentation of the Arkansas River. Mitigation measures include the control, retention and treatment of runoff, including any dewatering during construction; stabilization of any bank cuts in flood hazard areas; and careful operation and management of the drying beds to avoid spills or seepage and resultant contamination of surface or groundwaters. Long-term, beneficial impacts include improved wastewater and sludge management for the Southside WWTP and better quality discharges to the Arkansas River.

- Air Quality; Odor; Noise - Adverse, short-term impacts during construction include fugitive dust, noise, odors, and the temporary increase in vehicular traffic and equipment exhausts. Long-term

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*TWSD, Predesign Memorandum, Southside Drying Beds, May 1983.

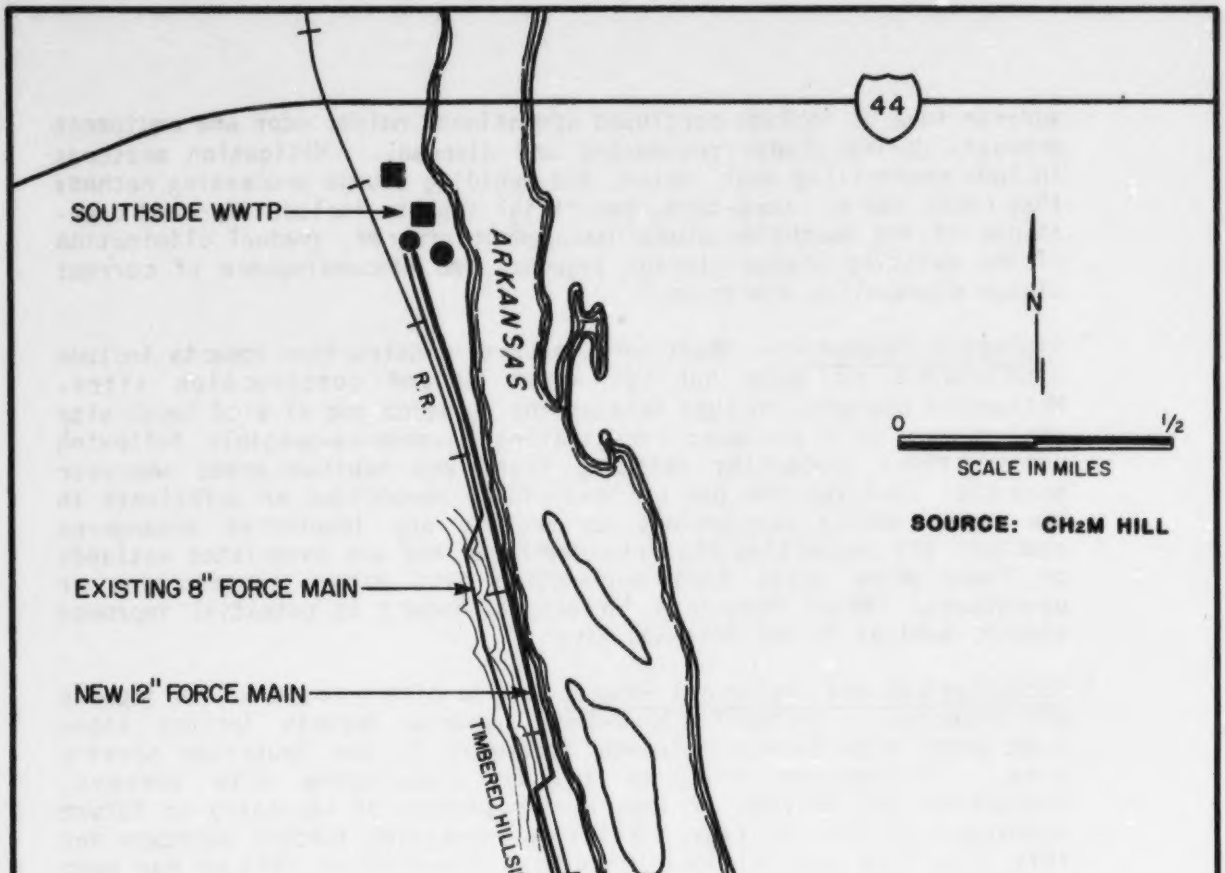
44
SOUTHSIDE WWTP
ARKANSAS
RIVER
R.R.
N
0
1/2
SCALE IN MILES
SOURCE: CH2M HILL
EXISTING 8" FORCE MAIN
NEW 12" FORCE MAIN
TIMBERED HILLSIDE
NEW FIVE ACRE DRYING BEDS
DECANT PUMP STATION
LAGOON (UNDER CONSTRUCTION)
PROPOSED
71ST ST
BRIDGE

FIGURE III-4
SOUTHSIDE WWTP AND NEW 12-INCH FORCE MAIN
TO LAGOON/DRYING BED AREA

adverse impacts include continued operational noise, odor and equipment exhausts during sludge processing and disposal. Mitigation measures include controlling dust, noise, and avoiding sludge processing methods that cause odors. Long-term, beneficial impacts include improved operations of the Southside sludge management program, gradual elimination of the existing sludge storage lagoons, and discontinuance of current sludge stockpiling practices.

- Biological Resources - Short-term, adverse construction impacts include disturbance of some habitat areas around construction sites. Mitigation measures include holding the duration and size of local site disturbance to a minimum; revegetating as-soon-as-possible following construction; protecting existing trees and habitat areas wherever possible; limiting the use of pesticides, herbicides or defoliants in the area; taking precautions to protect any identified endangered species; and protecting the Arkansas River and any associated wetlands or flood prone areas from degradation from either construction or operations. Minor long-term, beneficial impact is potential improved aquatic habitat in the Arkansas River.

- Archeological and Historical Resources - No direct construction impacts are expected. Indirect, long-term, adverse impacts include those associated with indirect growth pressures in the Southside service area. Mitigation measures include continuing site surveys, evaluations,and salvage of important resources as necessary in future expansions of the facility. A letter requesting further guidance for this site from the Oklahoma Historical Preservation Officer has been dispatched.

- Socio-Economic and Land Use Factors - Indirect short-term, adverse impacts include some traffic and utility disruptions. There are no nearby land uses that should be impacted, except for the MOPAC RR right-of-way (ROW). Indirect, long-term, adverse impacts include increased urban growth due to improved operations at Southside. Mitigation measures include plans and schedules to minimize traffic/utility disruptions, and avoidance of any conflicts along the railroad ROW. Long-term, beneficial impacts include improved infrastructure to support Southside growth, reduction in potential health hazards associated with existing lagoons and sludge stockpiling, and improved operations of the Southside WWTP.

- Energy and Other Resources - Short-term, adverse construction impacts include increased use of energy, labor, capital and other resources. Long-term, adverse impacts include the long-term commitments of funds, energy and materials. Mitigation measures include the conservation and management of energy and other resources commitments during construction and operations. Long-term, beneficial impacts involve the reuse/-sale of treated sludge from the new drying bed operations.

In addition to the construction impacts due to the installation of the drying beds themselves, some impacts will be associated with the new 12-inch force main from the plant to the lagoon/drying bed site. Even though the new line is planned to parallel the existing 8-inch line along the MOPAC RR ROW, there will be surface disturbance along the route and some brush and trees may have to be removed. Blasting may be required during pipeline excavation and highway or railroad crossings will be bored rather than open cut. The alignment of the new 12-inch force main along the east side of the railroad ROW, to avoid the timbered hillside, results in the line going though a few short locations where the distance between the railroad and the embankment of the Arkansas River is narrow. Special installation measures, including a retaining wall, if necessary, will be used to provide adequate protection and stability to the proposed alignment.

PART IV. PREFERRED ALTERNATIVES

A. POSITION OF THE CITY AND PAC

The City of Tulsa has selected those alternatives recommended by the facilities plan engineer, endorsed by the Public Advisory Committee and approved by the Tulsa City Council for improvements and expansion of the City's wastewater treatment system. Those alternatives and improvements include the regionalization and phased expansion of the Northside WWTP, initially to secondary wastewater treatment for a 42.6 mgd capacity, and ultimately for advanced treatment levels; the adoption of a residual solids (sludge) management program based upon beneficial reuse of sludge from all the City's WWTP's; a sewer system improvement plan for the expanded Northside Service Area based upon the results of an already completed Infiltration/Inflow (I/I) Analysis and a Sewer System Evaluation Study (SSES) which is currently underway, and subsequent survey and rehabilitation program; an approved industrial waste pretreatment program; and, the completion of the following components of the overall system:

- A Multifunctional Laboratory Building at the Northside WWTP,
- The initial five-acres of sludge drying beds for the Southside WWTP, and
- Secondary treatment level expansion of the Northside WWTP to a 38.1 mgd capacity.

In relation to this last component, the TWSD's preferred alternative includes both additional Northside capacity to provide a total of 42.6 mgd wastewater treatment capacity (in order to accommodate projected flows of 4.5 mgd from the Lords Cemetary drainage area), and additional treatment capability due to the installation of partial AWT units (in the form of eight granular media filters) to enable the City to meet discharge permit requirements by the July 1, 1988 deadline. Both of these latter features are proposals of the City of Tulsa.

The existing wastewater treatment at the Northside WWTP would be upgraded from the effluent quality levels required by the interim Administrative Order (see Appendix A) to those required by the NPDES permit. Further alternatives evaluation will be necessary before Federal/State approval of remaining AWT units at Northside, the City-wide sludge management plan, and the sewer system improvement plan are sought. The final upgrading of the Northside facility to AWT levels would provide a biological filter, activated sludge, granular media filtration system capable of maintaining NPDES requirements for projected flows to the design year 2005.

A high quality effluent of increasing quantities (up to the design 42.6 mgd average daily flow) would be discharged to the Bird/Mingo Creek receiving streams, providing enhanced water quality and improved aquatic habitat downstream of the plant. The preferred sludge management plan would provide an improved sludge quality for beneficial reuse/marketing of sludge from all of Tulsa's WWTP's, to be used as soil conditioners, for agricultural land applications, and for reclamation of previously disturbed areas. The sewer system improvement plan will provide for needed expansion of the collector system for the Northside Service Area; the control and reduction of I/I to minimize unnecessary stormwater flows and excessive treatment costs; and the installation of interceptors, collector lines and lift stations to relieve current overloaded conditions and provide for projected waste flows through the year 2025.

Further information on the preferred alternatives for the City of Tulsa's wastewater system, including capital and O&M costs, environmental considerations and impacts, financial implications to consumers and other related factors may be found in the following documents:

- ° Executive Summary, Northside 201 Facilities Plan, July 1982
- ° Northside 201 Facilities Plan, July 1982
- ° Areawide Residual Solids Management Plan, July 1982
- ° Northside Infiltration and Inflow Analysis, July 1982
- ° Industrial Waste Pretreatment Program, July 1982
- ° Draft Final Environmental Impact Statement, December 1982
- ° Tulsa Northside Facilities Plan, Response to Agency Review Comments, April 1982, and
- ° Predesign Memorandum, Northside WWTP,. Southside Drying Beds and Northside Multifunctional Lab Building, May 1983.

The Applicant's preferred alternatives, as outlined above, are considered to be: 1) The most cost effective methods of achieving the regional objectives; 2) the most flexible and adaptable in terms available solutions to permit compliance problems; 3) the most realistic approach to sludge reuse/disposal needs; and 4) the most environmentally acceptable alternatives of all those evaluated.

B. PREFERRED EPA AND OSDH

Based on a thorough review of the City of Tulsa's Facilities Plan, related Plans, Programs, Draft EIS oral and written comments and other documentations, EPA and OSDH prefer the alternative of funding construction of eligible components of the treatment system improvement proposed by the City.

EPA's and OSDH's preferred alternative is to complete the environmental review on the proposed Multifunctional Laboratory Building at the Northside WWTP and the five acres of sludge drying beds at the Southside WWTP and consider them for grant funding.

It is also preferred that the remaining secondary treatment expansion (i.e. to 38.1 mgd) at the Northside WWTP be included on the State Priority List for grant funding.

EPA will make a determination regarding the need for a Supplement to the Final EIS when TWSD applies for EPA grant monies for the remaining portions of the project (i.e. Northside collection system, sludge management plan, and advanced wastewater treatment).

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BIBLIOGRAPHY

The City of Tulsa. The Tulsa Water and Sewer Department. July 1982. Northside 201 Facilities Plan.

________________. July 1982. Areawide Residual Solids Management Plan.

________________. July 1982. Northside Infiltration and Inflow Analysis.

________________. April 1982. Response to Agency Review Comments.

________________. May 1983. Design Memorandum Northside Wastewater Treatment Plant, Southside Drying Beds.

U.S. EPA. August 1982. Draft Environmental Impact Statement. Wastewater Treatment Facilities Tulsa (Northside), Oklahoma.

GLOSSARY

Activated Sludge - A process that removes organic matter from sewage by saturating it with air and adding biologically active sludge.

Aerobic Digestion - A method of stabilizing sludge by reducing its organic content using aerobic microorganisms and extended aeration.

Alluvial Aquifer - Water bearing substrates containing material such as sand, silt, clay deposited along streams.

Association, soil - A group of soils geographically associated in characteristics repeating patterns and defined and delineated as a single map unit.

Ammonia - A compound of nitrogen found in wastewater, predominately in two forms; ionized (NH_3) and un-ionized (NH_3).

Biochemical Oxygen Demand (BOD) - The amount of dissolved oxygen required for the decomposition of organic matter in water. BOD is used as a measure to determine the efficiency of a sewage treatment plant or to determine the potential of an effluent to degrade a stream. The lower the BOD measurement, the cleaner the effluent. Termed as 5-day BOD (BOD_5) or the amount of oxygen required during a 5-day test.

Breakpoint Chlorination - A method of removing ammonia from wastewater by converting it to nitrogen gas, involving a series of chemical reactions as chlorine is added at a ratio of 7.6 parts Cl_2 to 1 part NH_3.

CFS (cubic feet per second) - A unit of measure used to describe volume of stream flow, equal to 1 cubic foot in 1 second (also called "second-foot").

Dissolved Oxygen - Gaseous oxygen in an aqueous solution.

Ecosystem - A system formed by the interaction of a community of organisms with its environment.

Effluent - The liquid that comes out of a wastewater treatment treatment plant after completion of the treatment process.

Environmental Impact - Effect of an action upon the physical, biological and socioeconomic characteristics of an area.

Fauna - Animals or animal life of a region.

Floodplain - A land area adjoining a river, stream, or watercourse that has been or may be covered by floodwater.

Floodway - The channel of a river or other watercourse and the adjacent land areas required to carry and discharge a flood of a given magnitude.

Flora - Plants of a given region.

Fugitive Dust - Dust particles that become airborne as a result of wind or construction-related activities, usually occuring on land without sufficient vegetative cover.

Granular Media Filtration - A method of removing particles from water by filtering it through a sand or multi-media filter. In this project the process is required to achieve an effluent level of suspended solids of 5 mg/l.

Gravity Thickeners - A method of concentrating sludge to remove excess water before further treatment.

Infiltration/Inflow - The intrusion of percolated storm water and/or groundwater into sewage collector systems, resulting in higher flows to the plant.

Land Application (Sludge) - A method of reusing sludge for agricultural purposes by applying the sludge to the land at rates that supply sufficient nutrients, for crops and limits the build-up of toxics, allowing for annual application to take place.

Mitigative Measure - A step taken to moderate the severity of the effects of a proposed action.

NPDES (National Pollution Discharge Elimination System) - An environmental program, administered by EPA, the Clean Water Act, as amended, to control discharge of wastes into waters of the United States.

Organic - Pertaining to or derived from living organisms, or compounds of carbon and hydrogen.

Prime Farmland - Specific soil types classified by the Soil Conservation Service as the best available soils for agriculture.

Process Train - The order in which sewage is treated as it flows through a treatment plant.

Residuals - The solids by-product from wastewater treatment processes.

Sewage - Wastewater that flows to sewers from residential, commercial, and industrial establishments and is carried in the sewers to wastewater treatment plants.

Sludge - Solid matter in sewage that settles to the bottom, floats, or becomes suspended in sedimentation tanks during wastewater treatment. Sludge must be disposed of by filtration and incineration or by transport to appropriate disposal sites.

Total Suspended Solids (TSS) - The level of suspended particulate matter in effluent.

208 Plan - An area-wide waste treatment management plan developed under Section 208 of the Clean Water Act, as amended, for constructing and operating wastewater treatment facilities.

Wastewater Treatment Plant (WWTP) - A facility consisting of a series of tanks, screens, filters, and other components that process wastewater so that pollutants are removed.

Water Table - The upper limit of the portion of the ground wholly saturated with water.

201 Plan - A plan developed under Section 201 of the Clean Water Act, as amended, for constructing and operating wastewater treatment facilities.

APPENDIX A

CURRENT ADMINISTRATIVE ORDERS

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6

IN THE MATTER OF §
§
THE CITY OF TULSA §
§
PROCEEDINGS UNDER SECTION 309(a)(5)(A) §
CLEAN WATER ACT, [33 USC 1319(a)(5)(A)] §
in RE: NPDES PERMIT NO. OK0026204 §

DOCKET NO. VI-83-730

ADMINISTRATIVE ORDER

The following FINDINGS are made and ORDER issued pursuant to the authority vested in the Administrator of the Environmental Protection Agency by the above referenced statute (hereinafter the Act) and duly delegated to the Regional Administrator, Region 6, and duly redelegated to the undersigned Director, Water Management Division, Region 6.

FINDINGS

I.

The City of Tulsa (hereinafter the Permittee) is a municipality, duly incorporated under the laws of the State of Oklahoma. The mailing address is 2317 South Jackson, Tulsa, Oklahoma 74107.

II.

Pursuant to the authority of section 402(a)(1) of the Act [33 USC 1342(a)(1)], the Environmental Protection Agency, Region 6, had issued NPDES permit No. OK0026204 to the cited municipality. The permit authorizes the discharge of specified qualities and quantities of effluent to receiving waters from the Coal Creek Sewage Treatment Plant. Pollutant discharge beyond permit limitations is prohibited by the permit, in accordance with the Act.

According to information received by the Environmental Protection Agency, Region 6, the Permittee cannot comply with the effluent limitations of the permit and Act, using the existing treatment works.

ORDER

Based on the foregoing FINDINGS and pursuant to the authority vested in the Administrator of the Environmental Protection Agency under section 309(a) of the Act [33 USC 1319(a)] and duly delegated, it is hereby ORDERED:

A. That the Permittee efficiently operate and maintain the existing treatment works, so as to discharge effluent which does not exceed the following INTERIM LIMITATIONS:

Effluent Characteristic	Discharge Limitation		
	kg/day(lb/day)	Other Units (mg/l)	
	30 day Avg.	30 day Avg.	7 day Avg.
Biochemical Oxygen Demand (BOD5)	756 (1668)	36	42
Total Suspended Solids (TSS)	728 (1605)	32	37

Monitoring, analysis, and reporting for all parameters (including flow) shall be in accordance with Part I.C. of NPDES permit No. OK0026204, pages 4 through 7.

B. That the Permittee report any occurrences of noncompliance with the interim limitations contained in Part A above, in accordance with requirements of Part II.A.2. of NPDES permit No. OK0026204, pages 10 and 11. During the effective period of this Administrative Order, the Permittee need not report occurrences of noncompliance with final effluent limitations for the parameters described above, as specified in Part I.A.1. of the permit.

C. That all other terms and conditions of the permit are effective as issued and require full compliance except Fecal Coliform and Ammonia Nitrogen for which monitoring, analysis, and reporting are not required at this time.

D. The effective date of this ORDER shall be the date it is received by the Permittee. This ORDER shall expire on October 17, 1985, the date the Northside plant becomes operational.

DATED: This 17th day of March, 19 83.

Myron O. Knudson

Myron O. Knudson, P.E.
Director, Water Management Division (6W)

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6

IN THE MATTER OF § DOCKET NO. VI-83-731
§
THE CITY OF TULSA §
§
PROCEEDINGS UNDER SECTION 309(a)(5)(A) §
CLEAN WATER ACT, [33 USC 1319(a)(5)(A)]§
in RE: NPDES PERMIT NO. OK0026212 § ADMINISTRATIVE ORDER

The following FINDINGS are made and ORDER issued pursuant to the authority vested in the Administrator of the Environmental Protection Agency by the above referenced statute (hereinafter the Act) and duly delegated to the Regional Administrator, Region 6, and duly redelegated to the undersigned Director, Water Management Division, Region 6.

FINDINGS

I.

The City of Tulsa (hereinafter the Permittee) is a municipality, duly incorporated under the laws of the State of Oklahoma. The mailing address is 2317 South Jackson, Tulsa, Oklahoma 74107.

II.

Pursuant to the authority of section 402(a)(1) of the Act [33 USC 1342(a)(1)], the Environmental Protection Agency, Region 6, had issued NPDES permit No. OK0026212 to the cited municipality. The permit authorizes the discharge of specified qualities and quantities of effluent to receiving waters from the Flat Rock Sewage Treatment Plant. Pollutant discharge beyond permit limitations is prohibited by the permit, in accordance with the Act. According to information received by the Environmental Protection Agency, Region 6, the Permittee cannot comply with the effluent limitations of the permit and Act, using the existing treatment works.

ORDER

Based on the foregoing FINDINGS and pursuant to the authority vested in the Administrator of the Environmental Protection Agency under section 309(a) of the Act [33 USC 1319(a)] and duly delegated, it is hereby ORDERED:

A. That the Permittee efficiently operate and maintain the existing treatment works, so as to discharge effluent which does not exceed the following INTERIM LIMITATIONS:

Effluent Characteristic	Discharge Limitation		
	kg/day(lb/day)	Other Units (mg/l)	
	30 day Avg.	30 day Avg.	7 day Avg.
Biochemical Oxygen Demand (BOD5)	1245 (2746)	52	63
Total Suspended Solids (TSS)	1152 (2540)	43	77

Monitoring, analysis, and reporting for all parameters (including flow) shall be in accordance with Part I.C. of NPDES permit No. OK0026212, pages 4 through 7.

B. That the Permittee report any occurrences of noncompliance with the interim limitations contained in Part A above, in accordance with requirements of Part II.A.2. of NPDES permit No. OK0026212, pages 10 and 11. During the effective period of this Administrative Order, the Permittee need not report occurrences of noncompliance with final effluent limitations for the parameters discussed above, as specified in Part I.A.1. of the permit.

C. That all other terms and conditions of the permit are effective as issued and require full compliance except Fecal Coliform and Ammonia Nitrogen, for which monitoring, analysis, and reporting are not required at this time.

D. The effective date of this ORDER shall be the date it is received by the Permittee. This ORDER shall expire on October 17, 1985, the date the Northside plant becomes operational.

DATED: This 17th day of March, 19 83.

Myron O. Knudson, P.E.
Director, Water Management Division (6W)

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6

IN THE MATTER OF §
§
THE CITY OF TULSA §
§
PROCEEDINGS UNDER SECTION 309(a)(5)(A) §
CLEAN WATER ACT, [33 USC 1319(a)(5)(A)]§
in RE: NPDES PERMIT NO. OK0026221 §

DOCKET NO. VI-83-732

ADMINISTRATIVE ORDER

The following FINDINGS are made and ORDER issued pursuant to the authority vested in the Administrator of the Environmental Protection Agency by the above referenced statute (hereinafter the Act) and duly delegated to the Regional Administrator, Region 6, and duly redelegated to the undersigned Director, Water Management Division, Region 6.

FINDINGS

I.

The City of Tulsa (hereinafter the Permittee) is a municipality, duly incorporated under the laws of the State of Oklahoma. The mailing address is 2317 South Jackson, Tulsa, Oklahoma 74107.

II.

Pursuant to the authority of section 402(a)(1) of the Act [33 USC 1342(a)(1)], the Environmental Protection Agency, Region 6, had issued NPDES permit No. OK0026221 to the cited municipality. The permit authorizes the discharge of specified qualities and quantities of effluent to receiving waters from the Northside Sewage Treatment Plant. Pollutant discharge beyond permit limitations is prohibited by the permit, in accordance with the Act. According

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to information received by the Environmental Protection Agency, Region 6, the Permittee cannot comply with the effluent limitations of the permit and Act, using the existing treatment works.

ORDER

Based on the foregoing FINDINGS and pursuant to the authority vested in the Administrator of the Environmental Protection Agency under section 309(a) of the Act [33 USC 1319(a)] and duly delegated, it is hereby ORDERED:

A. That the Permittee efficiently operate and maintain the existing treatment works, so as to discharge effluent which does not exceed the following INTERIM LIMITATIONS:

Effluent Characteristic	Discharge Limitation			
	kg/day(lb/day)	Other Units (mg/l)		
	30 day Avg.	30 day Avg.	7 day Avg.	
Outfall 001 - discharge from the trickling filter to Mingo Creek.				
Biochemical Oxygen Demand (5-day)	605 (1334)	20	30	8MGD
Total Suspended Solids (TSS)	908 (2002)	30	45	
Outfall 002 - discharge from the activated sludge plant to Bird Creek.				
Biochemical Oxygen Demand (BOD_5)	1664 (3670)	20	30	
Total Suspended Solids (TSS)	2496 (5504)	30	45	22 MGD

Monitoring, analysis, and reporting for all parameters (including flow) shall be in accordance with Part I.C. of NPDES permit No. OK0026221, pages 5 through 8.

B. That the Permittee shall comply with following schedule:

1. End construction for the 11 MGD, secondary treatment, expansion of the Northside plant by September 17, 1985.

2. Attain operational level of the Northside plant by October 17, 1985.

C. That no later than 14 calendar days following a date for an action identified in Part B above, the Permittee submit a written notice of compliance or noncompliance.

D. That the Permittee report any occurrences of noncompliance with the interim limitations contained in Part A above, in accordance with requirements of Part II.A.2. of NPDES permit No. OK0026221, pages 11 and 12. During the effective period of this Administrative Order, the Permittee need not report occurrences of noncompliance with final effluent limitations for the parameters described above, as specified in Part I.A.1. of the permit.

E. That all other terms and conditions of the permit are effective as issued and require full compliance except Ammonia Nitrogen, for which monitoring, analysis and reporting are not required at this time.

F. The effective date of this ORDER shall be the date it is received by the Permittee.

DATED: This 17th day of March, 1983.

Myron O. Knudson, P.E.
Director, Water Management Division (6W)

APPENDIX B

COMMENTS RECEIVED AFTER OCTOBER 15, 1982

COMMENT LETTERS RECEIVED AFTER THE
OCTOBER 15, 1982 EXTENDED COMMENT PERIOD

	Summary of Comment(s)
1. Michael C. Dolena Rt. 1, Twin Oaks Claremore, OK Received 11/9/82	° Possibility of environmental damage to Claremore Lake if site R-3 Rogers Co. is used by Tulsa. ° Authority by which Tulsa uses another jurisdiction (Rogers Co.) as a disposal area.
2. Alladdin Club Claremore, OK Ms. Marianne Patterson President (34 member signatures) Received 11/1/82	° Objection to use of site R-3 in Rogers Co. by City of Tulsa for ° Potential long-range health hazards from toxic heavy metals and nitrates in sludges.
3. Beverly Semkoff President, Ocieleta Federated Womens's Club Claremore, OK (15 member signatures) Received 11/1/82	° Same as above.
4. Cotillion Club of Claremore, OK Ms. Pam Smith, President (21 member signatures) Received 11/1/82	° Same as above.
5. Tuesday Study Club Claremore, OK Ms. Anne Gilkeim President (20 member signatures) Received 11/8/82	° Same as above.
6. The Esther Group of the United Methodist Women Claremore, OK Ms. Willa Snyder, Leader (11 member signatures) Received 11/17/82	° Same as above.

7.	Ms. Avis Diane Riley Claremore, OK (plus 4 additional signatures) Received 12/16/82	° Same as above.
8.	Richard H. Mosier President, Rogers State College Claremore, OK Received 12/16/82	° General opposition to use site R-3 in Rogers Co. for Tulsa sludge disposal.

Responses to Comments from above letters received after October 15, 1982 extended comment period:

TWSD's proposed modified approach includes continued study of the sludge management alternatives. In continuing to study the alternatives, an implementation period will be required by TWSD to develop markets, to construct required dewatering and distribution facilities, and to demonstrate the effectiveness of sludge management practices. This implementation period, referred to as "interim sludge management program" is estimated to take 3-4 years. During the interim sludge program, the proposed plan for sludge disposal will be codisposal.

APPENDIX C

MAILING LISTS

MAILING LISTS

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Mrs. O. J. Longacre
Assistant State Director
American Association of
Retired Persons
5909 S. 73rd East Ave.
Tulsa, OK 74145

Ms. Christy Johnson, Pres.
American Assoc. of Univ. Women
4216 East 103rd St.
Tulsa, OK 74136

Ms. Maxine Green, Pres.
American Business Women's Assoc.
4111 East 51st St. #141
Tulsa, OK 74135

Mr. Bob Jennings, V.P.
Audubon Society, Tulsa
Rt. 2, Box 105
Sand Springs 74063

Ms. Edith Kolar, Pres.
Business & Professional
Women's Club, Brookside
5351 East 20th
Tulsa, OK 74112

Ms. Janet Stout, Pres.
Business & Professional
Women's Club, East Tulsa
5800 E. Skelly Dr., Suite 1100
Tulsa, OK 74135

Ms. Sharman Sanders, Pres.
Business & Professional
Women's Clubs, North Tulsa
803 North Union Place
Tulsa, OK 74127

Ms. Lamoin Oldham, Pres.
Business & Professional Women's
Club - Oil Capital
2528 East 17th Place
Tulsa, OK 74104

Ms. Marjorie A. Kuehner, Pres.
Business & Professional Women's
Club, Tulsa
3203 South 88th East Ave.
Tulsa, OK 74145

Mr. Rob Ord
Canoe & Camping Club
6089 East 56th
Tulsa, OK 74135

Chamber of Commerce,
Greenwood
356 North Greenwood
P. O. Box 6235
Tulsa, OK 74106

Chamber of Commerce
Metropolitan Tulsa
616 South Boston
Tulsa, OK 74119

Mr. Gordon Everage, Pres.
Chamber of Commerce
Oil Capital
3726 South Peoria
Tulsa, OK 74105

Dr. Frank Manning, Chairm
American Institute of
Chemical Engineers
Chemistry Dept.
University of Tulsa
Tulsa, OK 74112

CITY/COUNTY LIBRARIES:

Bixby Library
20 East Breckenridge
Bixby, OK 74008

Broken Arrow Library
121 East College
Broken Arrow, OK 74012

Brookside Library
1207 East 45th Place
Tulsa, OK 74105

Collinsville Library
1223 West Main
Collinsville, OK 74021

East Second Library
2537 East 2nd
Tulsa, OK 74104

Florence Park Library
3210 East 21st St.
Tulsa, OK 74114

Jenks Library
523 West B Street
Jenks, OK 74037

Martin East Regional Lib
2601 South Garnett Rd.
Tulsa, OK 74129

Nathan Hale Library
6038 E. 23rd St.
Tulsa, OK 74129

North Harvard Library
1515 North Harvard
Tulsa, OK 74106

Owasso Public Library
118 South Main Street
Owasso, OK 74055

Prattville Library
3219 Sapulpa Road
Sand Springs, OK 74063

Red Fork Library
2310 West 43rd
Tulsa, OK 74107

Rudisill North Regional
1520 North Hartford
Tulsa, OK 74106

Sheridan Library
62 North Hartford
Tulsa, OK 74115

Skiatook Library
228 East Rogers Blvd.
Skiatook, OK 74070

Sperry Library
5 East Main
Sperry, Oklahoma 74073

Suburban Acres Library
551 East 46th St. North
Tulsa, OK 74126

Civitan International
Downtown
John Hayworth, Pres.
904 West Imperial
Broken Arrow, OK 74012

Civitan International
Southland
Dr. Leota Quiett, Pres.
4613 E. 25th St.
Tulsa, OK 74114

Genie Culwell, Exec. Secretary
Engineers Society of Tulsa
1501 E. 6th St.
Tulsa, OK 74120

Executive Women's Forum
P. O. Box 45851
Tulsa, OK 74145

Minifred E. Kibler, Pres.
Federation of Colored
Women's Club
1828 North Boston Place
Tulsa, OK 74106

Mrs. W. C. Freiberg, Pres.
Federation of Women's
Clubs, Tulsa
62 North Gillette
Tulsa, OK 74110

Fisherman's Association
of Tulsa
P. O. Box 2417
Tulsa, OK 74101

Ms. Suzette Birch,
Chairman
Homeowners Coalition
2687 South Utica
Tulsa, OK 74114

Hungry Club
Attn: Luther Woodward
Tulsa, OK 74106

Mr. Rick Bohls, Pres.
Jaycees, Southeast Tulsa
12749 E. 39th Street
Tulsa, OK 74145

Mr. Ryck L. Wilson, Pres.
Jaycees, Tulsa
628 Mayo Building
Tulsa, OK 74103

National Council of
Jewish Women-Tulsa Section
Attn: Vera Woolf, Pres.
6949 South Delaware Pl.
Tulsa, OK 74136

Junior League of Tulsa, Inc.
167 London Square
Tulsa, OK 74105

Kendall-Whittier Ministry
2501 East Archer
Tulsa, OK 74110

Kiwanis Club, Downtown
William A. Sanders, Pres.
P. O. Box 2300
Tulsa, OK 74192

Kiwanis Club, East Tulsa
Attn: Helen Weir, Program Chair.
P. O. Box 45142
Tulsa, OK 74129

Kiwanis Club, Southeast Tulsa
P. O. Box 45142
Tulsa, OK 74129

Kiwanis Club, Utica Square
P. O. Box 52094
Tulsa, OK 74152

League of Women Voters
of Tulsa
808 South Peoria
Tulsa, OK 74120

Mr. Jim Doyle, Pres.
Lions Club, Brookside
P. O. Box 7211
Tulsa, OK 74105

Mr. Clifford R. Johnson, Pres.
Lions Club, Downtown
320 South Boston, Suite 533
Tulsa, OK 74103

Mr. Walter Shelton
Lions Club, McCullough
13832 E. 12th
Tulsa, OK 74108

Lions Club, Metro
P. O. Box 441
Tulsa, OK 74101

Lions Club, Northwest Tulsa
Attn. Jim Campbell, Pres.
4030 West Edison
Tulsa, OK 74127

Lions Club, Red Fork
P. O. Box 9291
Tulsa, OK 74107

Mohawk Nature
Center Development, Inc.
P. O. Box 3486
Tulsa, OK 74101

National Assoc. for the
Advancement of Colored Peop
345 E. 36th St. No.
Attn: Maxine Johnson, P
Tulsa, OK 74106

Optimist Club, Black Gold
Attn: Jerry Hayes
3131 South Sheridan
Tulsa, OK 74145

Optimist Club of Tulsa, Inc
P. O. Box 2386
Tulsa, OK 74101

Optimist Club, Oil Capital
Attn: Wayne Richison
4522 W. 51st
Tulsa, OK 74135

Mr. Richard W. Mattes, Pres
Oklahoma Society of
Professional Engineers
6018 S. 74th E. Ave.
Tulsa, OK 74145

Rotary Club of Tulsa
1814 First National Bldg.
Tulsa, OK 74103

Rotary Club, North Tulsa
Attn: J. M. Lewis, Pres.
6725 E. 24th
Tulsa, OK 74129

Rotary Club, Southeast Tuls
c/o Mr. Van Dickson
Prudential Life
7020 So. Yale, Suite 275
Tulsa, OK 74177

Rotary Club, Southside
P. O. Box 7412
Tulsa, OK 74105

Rotary Club,
Southwest Tulsa
P. O. Box 1026
Sapulpa, OK 74066

Rotary Club,
Will Rogers
Attn: Paul K. Wallace, Pres.
1307 W. 22nd Place
Tulsa, OK 74101

Sertoma Club, East Tulsa
Attn: Mack Creager, Pres.
6612 E. 48th St.
Tulsa, OK 74145

Sertoma Club, Northside
P. O. Box 6375
Tulsa, OK 74106

Sertoma Club, Southeast
Attn: Paul F. McTighe, Pres.
2211 E. 21st St.
Tulsa, OK 74114

Sertoma Club, Southside
Attn: Jim Carl, Pres.
P. O. Box 3474
Tulsa, OK 74101

Tulsa Group of
The Sierra Club
Attn: Steve Horn, Chmn.
4410 S. 33rd W. Ave.
Tulsa, OK 74107

Skyline West Neighborhood
Association
c/o Frank Keith
2826 West Golden
Tulsa, OK 74127

Sun Oil Company
Responsible Citizen Program
907 South Detroit
Tulsa, OK 74120

Tulsa Coalition for
Older People
c/o Lee Patrick
6120 South Hudson Pl.
Tulsa, OK 74136

Tulsa Urban League
240 East Apache
Tulsa, OK 74106

Tulsa Urban Study Assoc.
P. O. Box 61
Tulsa, OK 74107

VI. NEWS MEDIA

Associated Press
P.O. Box 1770
Tulsa, OK 74102

Broken Arrow Edition - Tulsa Tribune/World
816 N. Elm Pl.
Broken Arrow, OK 74012

Broken Arrow Ledger
P.O. Box 307
Broken Arrow, OK 74012

Bixby Bulletin
Bobbie Boman
P.O. Box 278
Bixby, OK 74008

Catoosa Times Herald
P.O. Drawer B
Catoosa, OK 74015

The Collegian
University of Tulsa
600 S. College
Tulsa, OK 74104

Collinsville News
1108 W. Main St.
Collinsville, OK 74102

The Horizon
Tulsa Junior College
909 S. Boston
Tulsa, OK 74119

The Jenks Journal
P.O. Box 100
Jenks, OK 74037

Lake Keystone News
P.O. Drawer A
Mannford, OK 74044

Northside Times
3404 E. Pine St.
Tulsa, OK 74115

The Oklahoma Eagle
P.O. Box 3267
Tulsa, OK 74120

Owasso Reporter
P.O. Box 312
Owasso, OK 74055

Sand Springs Leader - Times
P.O. Box 340
Sand Springs, OK 74063

Sapulpa Daily Herald
P.O. Box 1370
Sapulpa, OK 74066

Skiatook Advocate
P.O. Box 529
Skiatook, OK 74070

Skiatook News
P.O. Box 307
Skiatook, OK 74070

Southside Times
7941 E. 57th St.
Tulsa, OK 74145

Tulsa County News
8545 E. 41st St.
Tulsa, OK 74145

Tulsa Downtowner
P.O. Box 2232
Tulsa, OK 74101

Tulsa Jewish Review
2205 E. 51st St.
Tulsa, OK 74105

Richard Dowdell
KRMG 583-7400
1502 South Boulder Ave
Tulsa, OK 74119

Jim Goss
KRAV 582-9696
P. O. Box 746
Tulsa, OK 74101

Bill Bruun
KMOD 664-2810
5358 E. 31st St. #200
Tulsa, OK 74135

Bruce Hughes
KELI 622-1430
P. O. Box 52185
Tulsa, OK 74152

Jack Campbell
KVOO 743-7814
P. O. Box 1349
Tulsa, OK 74101

Larry Hoefling
KWEN 583-0095
1502 S. Boulder Ave.
Tulsa, OK 74119

Tony Brubaker
KCFO 445-1186
3737 S. 37th W. Ave.
Tulsa, OK 74107

Bill Knowle
KWES 592-5947
600 South College
Tulsa, OK 74104

Mike Warren
KWPR
Box 1147
Claremore, OK 74017

Beverly Trimble
Channel 8
KTUL 446-3351
P. O. Box 8
Tulsa, OK 74101

Dan Hjernak
Channel 2
KJRH 743-2222
3701 South Peoria Ave.
Tulsa, OK 74105

Carolyn Jenkins
Channel 6
KOTV 582-9554
P. O. Box 6
Tulsa, OK 74101

Pat Stanfield
Tulsa Cable Television
P. O. Box 45800
Tulsa, OK 74145

Steve Logue
Tulsa Tribune 582-1101
P. O. Box 1770
Tulsa, OK 74102

Janet Pearson
Tulsa World 583-2161
P. O. Box 1770
Tulsa, OK 74102

Verdigris Valley Edition
Tulsa Tribune/World
107 South Chamber
Claremore, OK 74017

David Breed
Oklahoma Eagle 582-7124
P. O. Box 3267
Tulsa, OK 74101

Neighbor Newspapers 663-1414
8545 E. 41st St.
Tulsa, OK 74145

APPENDIX D

ARCHEOLOGICAL / HISTORICAL COORDINATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

June 13, 1983

Mr. Marshall Gettys
State Historic Preservation Officer
Oklahoma Historical Society
Historical Building
Oklahoma City, Oklahoma 73105

Dear Mr. Gettys:

In the spring and summer of 1981 and in February 1982, your office and the Oklahoma Archaeological Survey office provided reviews of the historic and cultural resources which could be affected by the proposed wastewater treatment facilities for Tulsa, Oklahoma.

Since our Draft EIS was published in August 1982, the preferred alternative proposed for current funding has changed.

The only three project elements currently being proposed are as follows:

1) an addition to the Northside Multifunctional Laboratory (adjacent to the existing maintenance and laboratory building) to provide laboratory, office, storage and classroom space;

2) the expansion and upgrading of the existing Northside Wastewater Treatment plant to provide secondary treatment requirements for 42.6 mgd capacity by 1985; and

3) the addition of five acres of sludge drying bed facilities for the Southside plant to provide sludge treatment capacity to meet projected 1985 quantities.

I believe that only one of these three elements, the sludge drying beds, would require further coordination with your office. Please advise me as to whether any historic or cultural remains exist on the site proposed for the drying beds, whether any survey work has been accomplished for this area, and whether you believe the potential to be high for uncovering sites in this area. Since time is critical for completion of our environmental review, I would appreciate receiving your written response by June 24, 1983.

For your use, I have enclosed three diagrams of the proposed sludge drying bed sites. If you have any questions, please call Joe Swick at (214) 767-9894.

Thank you for your assistance.

Sincerely yours,

Clinton B Spotts

Clinton B. Spotts
Regional EIS Coordinator (6ES-F)

Enclosures

Oklahoma
Historical
Society

Preservation Office
Historical Building
Oklahoma City, OK
73105

June 28, 1983

Clinton B. Spotts
US EPA
Region VI
1201 Elm Street
Dallas, Texas 75270

Re: Proposed Wastewater treatment facilities for Tulsa, OK

Dear Mr. Spotts:

There are no sites on either the National Register of Historic Places or the Oklahoma Landmarks Inventory within the referenced project area. Pending compliance with recommendations of the Oklahoma Archeological Survey, the State Historic Preservation Office has no objections to completion of the referenced project.

Sincerely,

CEMetcalf
Earle Metcalf
State Historic Preservation Officer

CEM:kt

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JUL 5 1983
6 ES

APPENDIX E

EPA RESPONSIVENESS SUMMARY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 6

DATE: June 20, 1980

SUBJECT: Responsiveness Summary

FROM: Clinton B. Spotts CBSpotts
Regional EIS Coordinator (6ASAF)

TO: Tulsa 201/EIS Mailing List

The purpose of this memo is to provide EPA's response to certain issues and concerns which have been raised to date by the public concerning the scope of work for the EIS on the Northside wastewater treatment facilities in Tulsa, Oklahoma. In considering the many comments received, they were separated into groups with the same general areas of concern for which single responses are provided as follows:

Comment: There are serious conflicts between what the existing 208 program has recommended and the NPDES permit requires and what the 201/EIS will evaluate.

Response: It is apparent that there are many individual and collective conceptions of the purpose or intent of the EIS. In order to better clarify EPA's position in this regard, the following points are provided: First, the purpose of the EIS is not to re-evaluate or review the adequacy of established Oklahoma water quality standards or any 208 study. Even though the EIS is responsible to recognize all the alternatives that have been investigated to date, we intend that it concentrate on those specific plans which will meet existing water quality standards and NPDES permit requirements. Second, it is our intent that all information available from EPA's approved 208 program be utilized to the utmost in preparation of the EIS, and that no duplication of effort take place. More specifically, we expect that the alternatives previously evaluated in the EPA approved 208 process will be discussed in the alternative section to explain why certain plans, if any, have been eliminated from further evaluation.

Comment: Toxics and heavy metals must be addressed and should be examined from the perspective that prevention is better than cure.

Response: EPA agrees and toxics will be covered under the EPA pre-treatment regulations. These data will be collected by the facility plan consultant and the environmental analysis presented in the EIS for coordination and review.

Comment: Does EPA ever consider the comments we send in or the questions that we ask? We're not sure because we don't always get a response.

Response: It is true that all comments have not received a written response even though we strive to answer every one. However, all of the comments received by EPA are considered and will be provided as a package to the EIS consultant. This information will form the basis from which subject areas to be investigated are developed. These subject areas will help form the outline for the EIS, which will be provided for review to the Citizen Advisory Committee, EPA, State, Grantee, and interested citizens. If the outline does not include a specific item that you have mentioned, please bring it to our attention again. EPA is responsible to include it if it is deemed necessary or explain why it is not an appropriate item in the scope of the EIS.

Comment: What is the anticipated schedule of the Step 1 facility plan and EIS, Step 2 detailed design and Step 3 construction in respect to the compliance date of July 1, 1983 for Northside wastewater treatment plant to meet its present NPDES permit?

Response: The facility plan and EIS (Phase II, Step 1) as well as the detailed design for the additional 11 mgd secondary treatment (Phase I, Step 2) are scheduled to be complete in September 1981. This would leave approximately 23 months for completion of the project (Phase I, Step 3 and Phase II, Steps 2 & 3) to meet the present NPDES permit requirements by July 1, 1983.

Comment: Numerous requests have been made that the EIS focus on key environmental issues which have been presented to EPA and local officials over the past four years. There is no evidence that a careful selection of issues has been made.

Response: When EPA issued the Notice of Intent to prepare the EIS, the scoping process was initiated to receive comments regarding specific issues and concerns of EPA's proposed action. The comments received were considered by EPA and incorporated into our letter to the City of Tulsa on development of the final SOW for the EIS. However, the basic selection process will be coordinated by the EIS consultant when the environmental analysis methodology is developed. At that time, evaluation criteria will be selected and weighted to focus on the key environmental issues.

APPENDIX F

PUBLIC PARTICIPATION EVALUATION

WATER AND
SEWER DEPARTMENT

CITY OF TULSA OKLAHOMA

200 CIVIC CENTER • TULSA, OKLAHOMA • 74103

June 26, 1983

Mr. Clinton Spotts
Regional EIS Coordinator
US EPA
Region VI
1201 Elm Street
Dallas, Texas 75270

Re: Evaluation of the public
participation program for
the Tulsa Northside Facilities
Plan and EIS

Dear Mr. Spotts:

The public participation program evaluations submitted by members of the 201/EIS Public Advisory Committee (PAC) essentially reflect the City staff's evaluation of the program. The extensive involvement and support of PAC members and local, state and federal agencies in our public participation effort enabled the City of Tulsa to complete both the Facilities Plan and EIS in a timely manner and move toward compliance with the requirements of the Clean Water Act.

Sincerely,

Barbara Shirley

Barbara A. Shirley
Grants Administrator

BAS/mlc